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3,512,537

ADJUSTABLE AERATED CIGARETTE

Filed Nov. 27, 1968

Fig. 1.

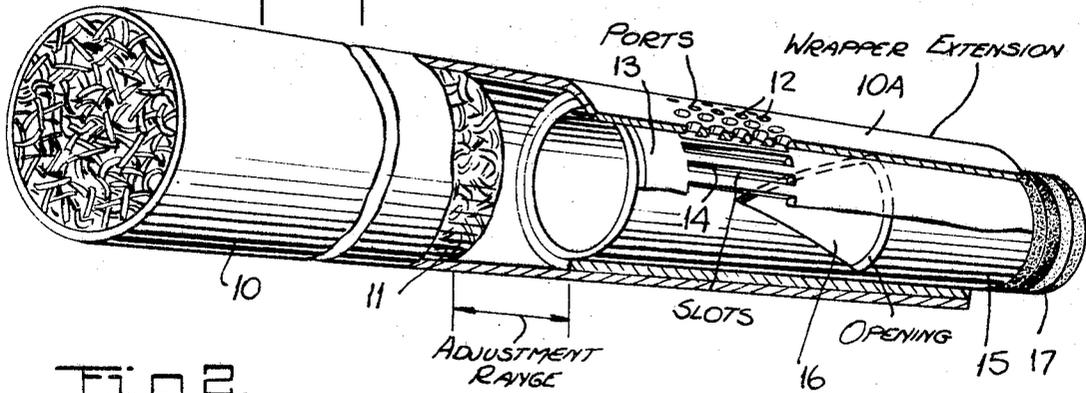


Fig. 2.

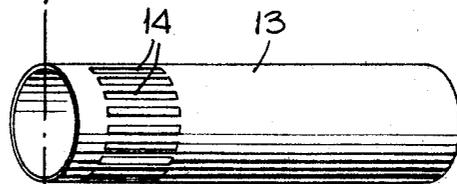
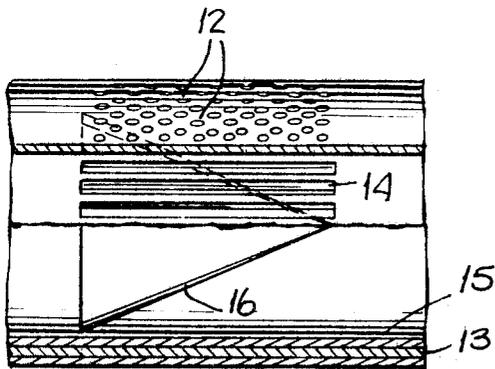
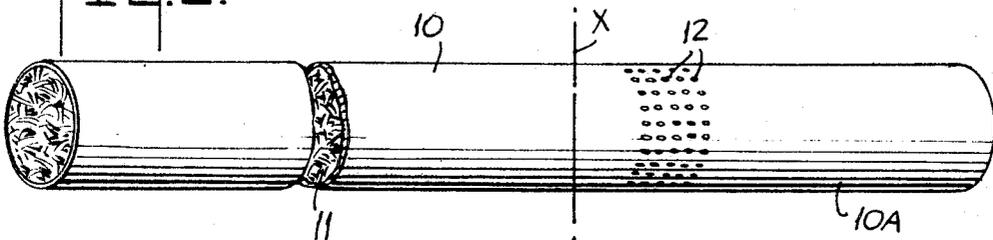


Fig. 3.

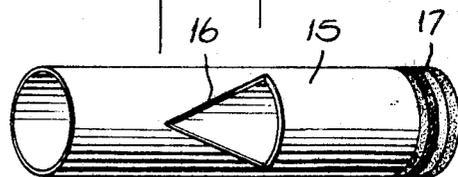
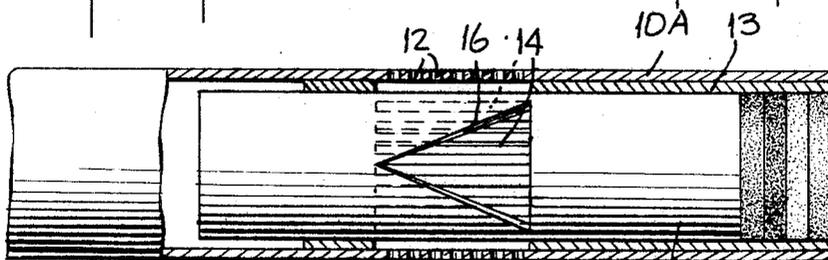


Fig. 5.



FULLY INSERTED

Fig. 5.

Fig. 4.

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3,512,537

ADJUSTABLE AERATED CIGARETTE

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6 Claims

ABSTRACT OF THE DISCLOSURE

An adjustable, aerated cigarette structure in which the cigarette wrapper is provided with a tobacco-free extension surrounding a sleeve, the extension having a circumferential region of pores which register with a ring of slots formed in the sleeve adjacent the end of the tobacco column. A tube is telescopically received in the sleeve, the tube having an opening therein which is so shaped that when the tube is pushed inwardly, it more or less registers with the slots to provide a lateral air passage of varying dimensions.

This invention relates generally to cigarettes, and more particularly to a cigarette having an adjustable, aerating tip adapted to minimize the inhalation of harmful constituents of smoke.

Cigarette smoking is widespread in spite of the fact that many medical authorities maintain that smoking is injurious to health. Nicotine, tars and combustion products arising from the burning of tobacco are believed to have deleterious effects on the smoker, not merely because nicotine and tar deposits are introduced into the throat and lungs, but also because of carbon monoxide carried into the blood stream which gradually breaks down the iron content of the blood.

In an effort to reduce the adverse effects of smoking, it is common practice to attach filter tips to the ends of cigarettes, the filter acting to trap noxious ingredients and thereby to prevent their entry into the smoker's mouth. While such filters are effective to some degree, they nevertheless permit monoxide-laden smoke and certain volatile combustion products to pass therethrough. Moreover, as a general rule, the more efficient the filtration, the greater the difficulty experienced by the smoker in drawing smoke through the filter medium. As a consequence, effective filtration usually dictates that the smoker draw harder. This increases the internal draft and gives rise to an elevated combustion temperature.

During high-temperature combustion of organic cigarette material, certain carcinogenic agents are formed. Consequently, while filters serve to trap some harmful constituents in the smoke, they may be responsible for raising the combustion temperature to a level which steps up the production of cancer-causing chemicals. When, for example, as noted in the Figge Pat. 2,992,647, the combustion temperature of tobacco mounts to above 650° C.—700° C., aromatic tars are produced. These tars are believed to have carcinogenic properties.

In an attempt to lower the combustion temperature and also to dilute the carbon-monoxide content of the tobacco smoke, various aerating schemes have been proposed for this purpose. Thus cigarettes have been designed with ventilating holes in their wrappers as in Miller Pat. 3,202,915, and with other aerating expedients adapted to intermingle air with the smoke and to cool the combustion region.

Whereas, in the Schur Pat. 2,980,116, a cigarette is provided with ventilating pores or other means to intermingle air with the smoke, the relative amounts of air and smoke inhaled by the smoker is predetermined and

cannot be adjusted. Clearly the greater the percentage of air, the cooler the smoke and the smaller the amount of harmful ingredients inhaled by the smoker. But since the introduction of air reduces the amount of smoke inhaled, it will to some extent also decrease the pleasure derived from smoking.

A smoker who is addicted to cigarettes and yet cognizant of the harmful effects thereof, is generally not disposed to dispense with cigarettes entirely nor, on the other hand, is he prepared to face the full consequences of inhaling untreated smoke. Hence each smoker desires to strike a balance between pleasure and safety. This balance is a matter of individual judgment, for to maximize safety, the smoker should inhale virtually no smoke and for optimum pleasure, no air should be intermingled with the smoke. With known aeration arrangements, the ratio of smoke and air is dictated by the cigarette or holder design and the smoker has no control over this ratio.

Accordingly, it is the main object of this invention to provide a cigarette structure having an aerating tip which is readily adjustable to control the ratio of air and smoke inhaled by the smoker.

More specifically, it is an object of this invention to provide an aerating tip which is effectively concealed, so that the cigarette has the appearance and handling qualities of a conventional tipped cigarette and yet may be adjusted to suit the requirements of the user.

Also, an object of the invention is to provide an adjustable, aerated cigarette which may be mass-produced at low cost, the cigarette having an attractive appearance.

Briefly stated, these and other objects of the invention are accomplished in a cigarette having a tubular paper wrapper which encloses a column of tobacco whose length is shorter than that of the tube to allow for a tobacco-free extension, the wrapper being perforated in a circumferential region in said extension adjacent the inner end of said column. Fixedly disposed within said wrapper extension is a tubular sleeve having a ring of slots in registration with the perforated region of said wrapper, while telescopically received in said sleeve and initially projecting outwardly therefrom is a tube having a wedge-shaped opening.

In one embodiment of the invention, the initial orientation of the tube opening with respect to the slots in the sleeve is such that only the apex portion of the opening communicates with the slots, whereas when the tube is pushed in fully the entire opening is in communication with the slots, intermediate positions of the tube resulting in intermediate degrees of communication.

Thus when suction is applied by the smoker, air is drawn in through the lateral passage formed by the perforated region in the wrapper, the slots in the sleeve and the opening in the tube are intermingled with the smoke drawn from the burning tobacco in the column, the ratio of air and smoke being determined by the adjusted position of the tube.

For a better understanding of the invention, as well as other objects and further features thereof, reference is made to the following detailed description to be read in conjunction with the accompanying drawing wherein:

FIG. 1 is a cigarette structure in accordance with the invention which is partly in section to reveal the structure of the adjustable, aerating tip in its initial position to provide minimum air intake;

FIG. 2 shows the wrapper alone;

FIG. 3 shows the sleeve alone;

FIG. 4 shows the tube alone;

FIG. 5 shows the cigarette with the tube fully pushed into its final position to maximize the air intake;

FIG. 6 illustrates an alternative configuration for the tube opening in its initial position to provide maximum air intake.

Referring now to the drawing, there is shown a cigarette structure in accordance with the invention, the structure comprising a wrapper 10 of paper suitable for cigarettes and a column 11 of tobacco whose length is such that the column falls short of the wrapper to allow for a tobacco-free extension 10A.

The line X in FIG. 2 indicates the junction between the end of the tobacco column and the extension 10A of the wrapper. Formed in a circumferential region in the wrapper extension adjacent line X are pores 12 which are permeable to air, the pores being minute and virtually invisible, so that the cigarette wrapper, to all appearances, is conventional.

Inserted within wrapper extension 10A and held therein by the wrapper is a sleeve 13 having a ring of slots 14 therein which lie in registration with the pores 12 in the wrapper extension. Sleeve 13 is fabricated of relatively stiff paper or plastic material and serves also to reinforce the end extension of the wrapper, thereby forming a non-collapsible tip.

Telescopically received within sleeve 13 is a tube 15 of similar material, the tube having a triangular or wedge-shaped opening 16 therein. In its initial position, the apex portion of opening 16 registers with slots 14 in the sleeve, the end of tube 15 projecting outside of the sleeve. When, however, tube 15 is pushed in fully, the entire opening 15 lies in registration with the slots 14.

Thus in the initial position of tube 15, as shown in FIG. 1, a lateral air passage is created which passes through the pores 12 of the wrapper, the slots 14 of the sleeve and the exposed apex portion of opening 16, the passage being restricted by the relatively small dimensions of the apex portion. When the smoker draws on his lighted cigarette, the resultant smoke is intermingled with cool air drawn through the restricted passage, the ratio of air to smoke being low so that the smoker inhales a fairly small percentage of air. Nevertheless, the cool air which intermingles with the smoke has a beneficial cooling effect and serves to dispose and homogenize the particles contained in the smoke to reduce the deleterious effects thereof in the lungs.

When the tube 15 is pushed in fully, the triangular opening 16, as shown in FIG. 5, is then entirely in registration with slots 14, thereby providing a lateral air passage of maximum dimensions and a high ratio of air to smoke. In this operative position, the smoke is highly dispersed so that relatively little smoke is inhaled and the damaging consequences thereof are minimized.

The smoker need not push tube 15 in fully and may choose an intermediate position to suit his taste, in which event the ratio of air to smoke is at an intermediate level determined by the extent to which the tube is inserted. Thus in the arrangement shown in FIG. 1, the initial setting provides minimum aeration and the final setting, maximum aeration. A smoker using this expedient may, in the course of time, reduce his smoke intake to a minimal level, while retaining the psychological gratification of smoking.

By reversing triangular opening 16 and arranging its position, as shown in FIG. 6, so that at the initial tube position, the entire opening is in registration with the slots 14 in the sleeve, one can provide maximum aeration at the initial position. Then by pushing tube 15 inwardly, the effective air passage is reduced until only the apex portion of opening 16 remains in registration to provide minimum aeration.

In order to indicate the degree of aeration, the projecting portion of tube 14 may have a series of differently colored rings 17 printed thereon. Thus as the tube is pushed in, different colors come into registration with the end of the wrapper. For example, the ring colors may in the embodiment of FIG. 1, range from dark red to

lighter shades thereof to indicate increasing coolness as the tube is pushed in.

While there has been shown and described a preferred embodiment of an adjustable aerated cigarette, in accordance with the invention, it will be appreciated that many changes and modifications may be made therein without, however, departing from the essential spirit of the invention. One may for example fill tube 14 with filter material of the type presently used in tipped cigarettes, whereby the intermingled air and smoke is subjected to filtration.

Instead of a single, large triangular opening 16 in tube 15, one may use an array of smaller openings of the same shape to distribute the weakening effect of the openings on the structure of the tube. The purpose of the opening or openings is to provide a graduated lateral passage in the cigarette tip, and the same result may be accomplished by a longitudinal series of slits cut in tube 15, so that as the tube is pushed in, more slits fall into registration with the slots in the sleeve.

What I claim is:

1. An adjustably aerated cigarette structure comprising:
 - (a) wrapper surrounding a column of tobacco, the length of the column being less than that of the wrapper to provide a tobacco free extension, said extension having a foraminated region adjacent the inner end of the column.
 - (b) a sleeve fixedly held within said extension and having a ring of slots in registration with said region; and
 - (c) a tube telescopically received within said sleeve and initially projecting therefrom, said tube having an opening which at the initial position of said tube forms a lateral air passage with said slots and said foraminated region, the dimensions of said passage being varied as the tube is pushed inwardly from the initial position to a final position at which the end of said tube is flush with the end of said wrapper.
2. A structure as set forth in claim 1, wherein said tube opening has a triangular shape whose apex portion registers with said slots at said initial tube position and which entirely registers with said slots at said final position.
3. A structure as set forth in claim 1, wherein said tube opening has a triangular shape and fully registers with said slots in said initial position, only the apex portion thereof being in registration at the final position.
4. A structure as set forth in claim 1, wherein said projecting portion of said tube has a series of differently colored rings thereof.
5. A structure as set forth in claim 1, wherein said wrapper is made of paper and said sleeve and tubes of plastic material.
6. A structure as set forth in claim 1, wherein said opening is graduated to vary the size of said passage as the tube is pushed in.

References Cited

UNITED STATES PATENTS

701,613	6/1902	Raecke.	
2,992,647	7/1961	Figge	131-9
3,232,299	2/1966	Miller.	
3,359,988	12/1967	Thomson	131-10.3

FOREIGN PATENTS

706,624	3/1954	Great Britain.
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U.S. Cl. X.R.

75 131-11, 198, 10.3