United States Patent

Kleinhans

[15] **3,685,522**

[45] **Aug. 22, 1972**

[54] CIGARETTE HOLDER

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[22] Filed: **July 16, 1971**

[21] Appl. No.: **163,433**

Related U.S. Application Data

[63] Continuation of Ser. No. 862,721, Oct. 1, 1969, abandoned.

[52] **U.S. Cl.** .....**131/198 A,** 131/215 B, 131/223

[51] **Int. Cl.**.....**A24f 05/04**

[58] **Field of Search** .....131/198 A, 215 B, 223

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[57] **ABSTRACT**

A cigarette holder having means for variably diluting the smoke with atmospheric air is disclosed. The new device has an radial passageway of variable cross sectional area connecting the smoke conveying passageway of the holder with the atmosphere and a pressure responsive valve in the smoke conveying passageway between the cigarette and the radial passageway.

2 Claims, 4 Drawing Figures

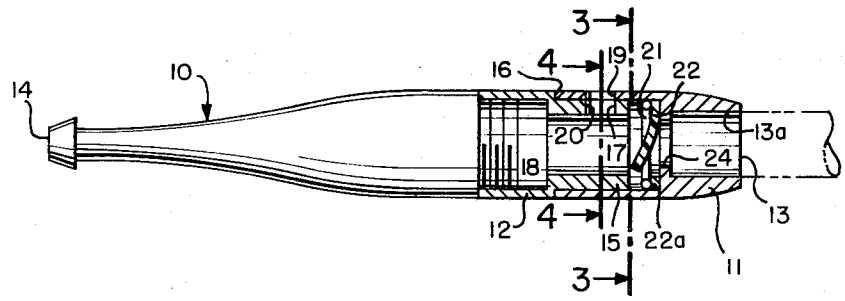


FIG. 1

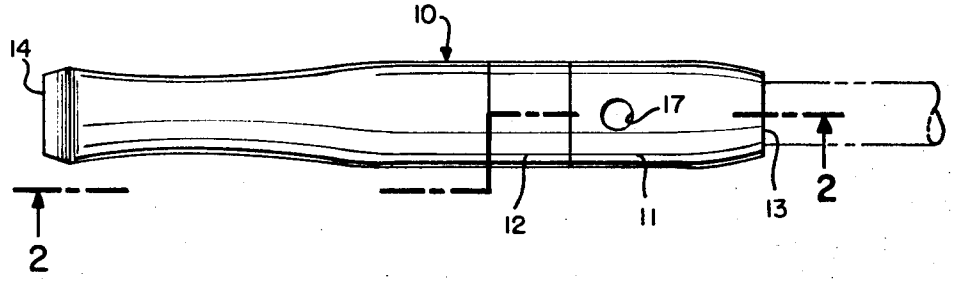


FIG. 2

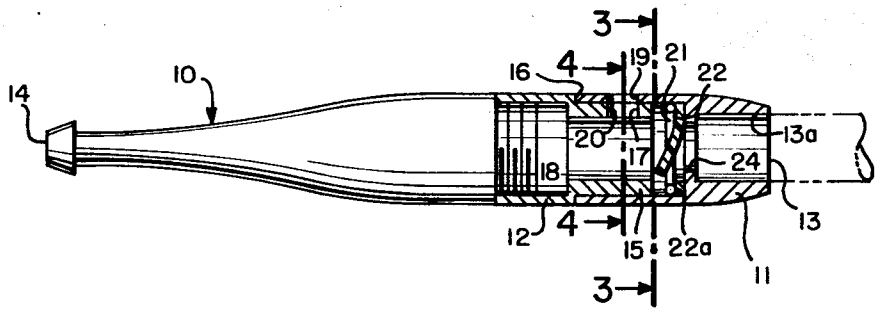


FIG. 3

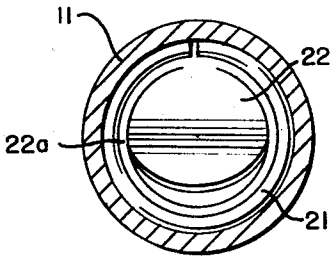
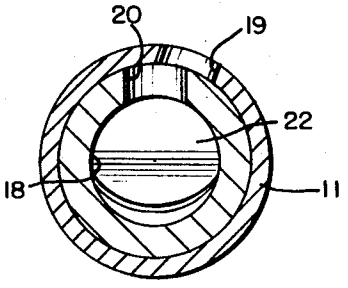


FIG. 4



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CIGARETTE HOLDER

This is a continuation of U.S. Pat. application Ser. No. 862,721, filed Oct. 1, 1969, and now abandoned.

BACKGROUND OF THE INVENTION

The present invention pertains to devices for holding smoking implements such as cigarettes and cigars during consumption. Specifically, the invention provides a cigarette holder having means for mixing air with the smoke withdrawn from a cigarette and means for varying the proportion of air and smoke in the smoke mixture.

In recent years, the public has become aware of possible health hazards related to the consumption of tobacco products. This awareness has manifested itself in the desire of many smokers to reduce the amount of cigarette smoke taken into their bodies and even to withdraw from the smoking habit entirely. Overcoming the physical and psychological effects resulting from a reduction in the consumption of tobacco products has proven to be a significant obstacle for many smokers desiring to reduce their cigarette consumption. Generally, most smokers desiring to reduce the amount of harmful tobacco ingredients inhaled or to withdraw from the habit entirely have found it necessary to use an aid in order to be successful.

A particularly effective means for reducing the intake of harmful tobacco ingredients is to very gradually reduce the number of cigarettes consumed in a given period of time or, with the same effect, reducing the amount of smoke actually inhaled per cigarette smoked. The present invention provides a device that aids the smoker in reducing the amount of smoke entering his body, without requiring him to reduce the number of cigarettes consumed. This result is obtained by providing a cigarette holder that permits atmospheric air to mix with the smoke withdrawn by the smoker, thereby diluting it before it reaches the smoker's mouth. By progressively increasing the amount of air mixing with the smoke, the actual amount of smoke entering the smoker's mouth per cigarette is progressively decreased. Correspondingly, a progressively increasing amount of smoke, that would normally be inhaled by the smoker, is harmlessly burned off at the tip of the cigarette, even though the smoker takes as many puffs on each individual cigarette as he normally did. The new device thereby permits the smoker to fool his body that he is smoking the same amount, while, in effect, his consumption of the harmful ingredients of cigarettes is significantly and, if desired, progressively less.

A further significant advantage of the new device is the intake of cool atmospheric air directly into smoke passageway which conveys the smoke from the cigarette to the mouthpiece. The direct impingement of the air on the hot smoke has a very desirable cooling effect on the smoke. Studies have shown that a reduction in the temperature of the smoke inhaled significantly reduces its harmful effects on the body.

Although the prior art has recognized the desirability of providing a cigarette holder with a variable means for permitting the smoker to dilute the smoke mixture with a variable amount of atmospheric air, the prior art devices are not entirely satisfactory and in general are significantly more complicated in operation than the new device.

SUMMARY OF THE INVENTION

The new smoking device comprises a tubular cigarette holder generally of conventional design. One end of the device has a cavity of an appropriate size for frictionally retaining a cigarette therein while the other end of the holder is shaped to form a mouthpiece. A passageway for conveying smoke extends through the tubular holder from the mouthpiece to the cigarette holding cavity. In operation, suction applied to the mouthpiece draws smoke from the burning cigarette into the smoker's mouth through the smoke passageway.

In accordance with the invention, an axial passageway, joining the smoke passageway with the atmosphere, is provided in the tubular body of the holder. The cross-sectional area of the axial passageway is selectively variable, permitting the smoker to dilute the smoke withdrawn from the cigarette with a variable amount of air.

In accordance with the invention, a pressure responsive valve means is disposed within the smoke passageway. Advantageously, the valve means is located between the cigarette holding cavity of the forward cylindrical section and the axial passageway. The valve means of the new smoking device is activated by suction applied to the mouthpiece, and assumes its fully open position when the axial passageway is fully closed. The valve means works in conjunction with the axial air passageway to progressively increase or decrease the proportion of air in the smoke mixture entering the mouth of the smoker.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of a smoking device incorporating the principles of the invention;

FIG. 2 is a partial cross sectional view of the smoking device of FIG. 1 taken along line 2—2 of FIG. 1.

FIG. 3 is a cross sectional view taken along line 3—3 of FIG. 2.

FIG. 4 is a cross sectional view taken along line 4—4 of FIG. 2 (with the cylindrical portions rotated to show a reduced cross sectional area axial passageway).

DESCRIPTION OF A PREFERRED EMBODIMENT

Although the principles of the invention may be applied to many types of cigarette holders and in many forms, the device illustrated in the drawings is particularly advantageous and is preferred.

Referring to FIG. 1 of the drawing, a two-piece, tubular cigarette holder, indicated generally as **10** is shown. The cigarette holder **10** includes interfitting cylindrical portions **11** and **12** having, respectively, a cigarette retaining end **13** and a mouthpiece end **14**. The cigarette retaining end **13** typically has a cylindrical recess **13***a* of an adequate diameter to retain a cigarette therein by frictional engagement. The cylindrical portion **12** includes a reduced diameter member **15** and a shoulder step **16**. The outside diameter of the reduced diameter member **15** is related to the inside diameter of cylindrical portion **11** so that a relatively tight frictional joint is effected between cylindrical portions **11** and **12**. However, the joint between portions **11** and **12** should permit relative rotation between the two portions in response to a moderate application of rotative force to either portion. The shoulder step ele-

ment 16 provides a stop for cylindrical portion 11 when the device is assembled.

A smoke passageway (not completely shown) extends from the cigarette retaining end 13 to the mouthpiece end 14 of the device. The smoke passageway conveys smoke from a lit cigarette held in the cylindrical recess 13*a* to the mouth of a smoker when he applies suction to the mouthpiece.

In accordance with the invention, a radial passageway 17 is provided in the body of the device. The radial passageway 17 provides communication between an interior chamber 18 which is part of the smoke passage, and the atmosphere.

In accordance with a specific aspect of the invention, the radial passageway 17 is composed of a pair of registerable openings 19 and 20, located in each of cylindrical portions 11 and 12. Advantageously, the registerable openings are of the same diameter and are easily alignable by first slipping cylindrical portion 11 over reduced diameter member 15 until it is stopped by the step 16 and then rotating cylindrical portion 11 relative to cylindrical portion 12 until the openings 19 and 20 are aligned to the desired extent.

The radial passageway 17 of the new device functions to permit air to flow into the smoke passageway in response to suction applied to the mouthpiece and to mix with smoke drawn from a burning cigarette. As a result of the rotatable relationship between cylindrical portions 11 and 12, the cross sectional area, and thereby the amount of air flowing into the smoke passage through the radial passageway 17 can be varied from a maximum corresponding to full alignment of the opening 19 and 20 to a minimum of zero when the opening 20 is exposed to a solid peripheral portion of the reduced diameter member 15. An intermediate position is shown in FIG. 4. A maximum opening for hole 17 of one-eighth to three-sixteenths of an inch has been found to be advantageous with a diameter of five thirty-seconds inch preferred.

In accordance with another specific aspect of the invention, a valve element 22 is disposed in the smoke passageway of the new device between the radial passageway 17 and the cigarette retaining recess 13*a*. The downstream end of the recess 13*a* is defined by a relatively narrow passage portion 24 providing a seat for the cigarette on the upstream side thereof and a stop shoulder on the downstream surface thereof for a purpose to be described below. The valve element 22 is pressure responsive, being activated by suction applied to the mouthpiece 14. Typically, the valve element 22 is in a substantially fully closed position when the device is inactive (i.e., no suction being applied to the mouthpiece). In further accordance with the invention, the valve element 22 remains in a substantially fully closed position when suction is applied to the mouthpiece 14 and the radial passageway 17 is open to its maximum extent (i.e., the holes 19 and 20 are circumferentially aligned). Similarly, at the other end of the scale, the valve element 22 should attain a substantially fully open position, to permit free passage of smoke from a cigarette burning in recess 13*a* to the smoke passageway, in response to normal smoking suction applied to the mouthpiece 14, when the radial passageway 17 is fully closed.

In accordance with the principles of the invention, the amount of air mixing with smoke drawn from a burning cigarette through the smoke passageway of the new device can be varied from 0 to 100 percent by appropriate manipulation of the cross-sectional area of the radial opening 17. This permits a smoker to deliberately and periodically reduce the amount of smoke he inhales per cigarette while still satisfying the physiological dependence he might have on the smoking habit.

Referring to FIGS. 2, 3 and 4 of the drawing, a valve element in accordance with the invention is shown in detail. Preferably, the valve element 22 included a rubber-like circular member having a diameter only slightly less than the diameter of the smoke passageway at the shoulder provided by the downstream surface of the passage portion 24. To provide the desired valving action, the preferred valving element 22 is concentrically cut in a circular configuration with a sufficient portion of the periphery of the circular configuration left uncut to form a flap portion and a ring portion 22*a*. Advantageously, the valving element 22 is a synthetic rubber material such as neoprene that is resistant to the acids and other corrosive components of cigarette smoke. The rubber-like member of the valve element should probably have a hardness of from about 20 to 40 as measured on the Shore A scale.

The retaining means for holding the rubber-like circular element in place against the shoulder provided by the downstream surface of the passage portion 24 can be, for example, an adhesive or a mechanical device. Whatever means is used, it should not impart an odor to the cigarette smoke and should be resistant to the corrosive elements of cigarette smoke. As shown in FIGS. 2 and 3, the preferred retaining means is a circular spring element 21. The diameter of the spring element 21 in its relaxed state should be slightly greater than the diameter of the smoke passageway at the shoulder 24. When in place against the ring portion 22*a* of the valve element, the circular spring element 21 is in a compressed state, applying pressure to inner wall of circular portion 11, thereby retaining the valve element 22 in place against the shoulder provided by the downstream surface of the passage portion 24.

The new smoking device provides dual means cooperating with each other for mixing a predetermined amount of air with the smoke withdrawn from a burning cigarette. Both the radial air passageway and the valving means of the invention are responsive to suction applied to the mouthpiece of the holder and permit varying amounts of air and smoke into the smoke passageway. The new valving means functions to reduce the amount of smoke entering the smoke passageway as the cross-sectional diameter of the radial passageway and conversely. The increased sensitivity of the new device, resulting from the combination of the radial passageway and the valving means of the invention, provides a more effective and improved aid to those desirous of breaking the cigarette smoking habit.

I claim:

1. A cigarette holder or the like comprising
   a. a mouthpiece member having an inner end portion attached to be gripped by the mouth of an outer end portion,

b. a holding member for the cigarette or the like, telescopically assembled to the outer end portion of the mouthpiece member, and rotatably adjustable with respect to said mouthpiece member,

c. said holding member having a shouldered cavity for the substantially air tight reception of a cigarette or the like,

d. means in said mouthpiece and holding members forming a continuous smoke passage from said cavity to the inner end of said mouthpiece member,

e. an elastomeric pressure-responsive smoke passage restricting element receiving in said passage on the downstream side of said cavity,

f. said passage restricting element being operative normally to at least substantially restrict said smoke passage and being responsive to pressure differential between its upstream and downstream sides to open said passage progressively in response to increasing pressure differential, and

g. cooperating air passage means in the telescoped portions of said mouthpiece and holding members, located on the downstream side of said passage restricting element,

h. the respective air passage means in said mouthpiece and holding members being adjustable into at least partial registry to accommodate the controlled entry of air into same smoke passage on the downstream side of said passage restricting element.

2. A cigarette holder according to claim 1, further characterized by

a. said passage restricting element comprising a disc-like section of flexible neoprene disposed transversely across the smoke passage and having a portion elastically distortable in response to pressure differential to partly open said smoke passage, and

b. a ring-like retaining element being received in said smoke passage to retain said restricting element in its operative, transversely disposed position.

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