June 13, 1967 B. DE SIMONE 3,324,862

SMOKING DEVICE

Filed Aug. 31, 1964

FIG.1

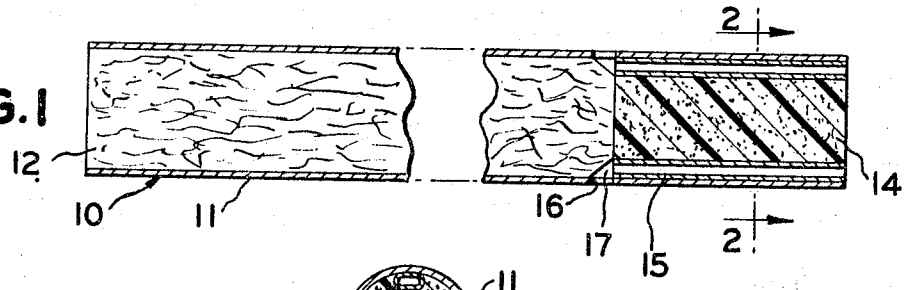


FIG.2

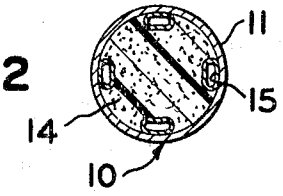


FIG.3

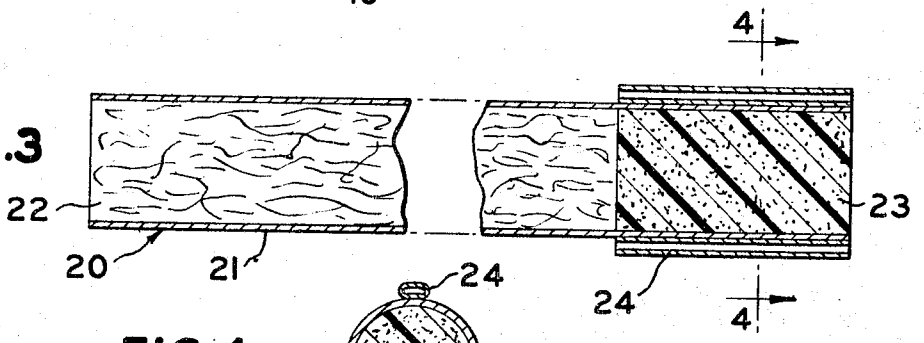


FIG.4

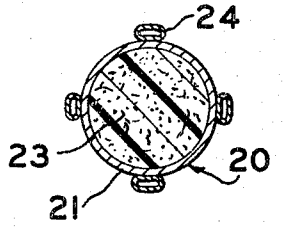


FIG.5

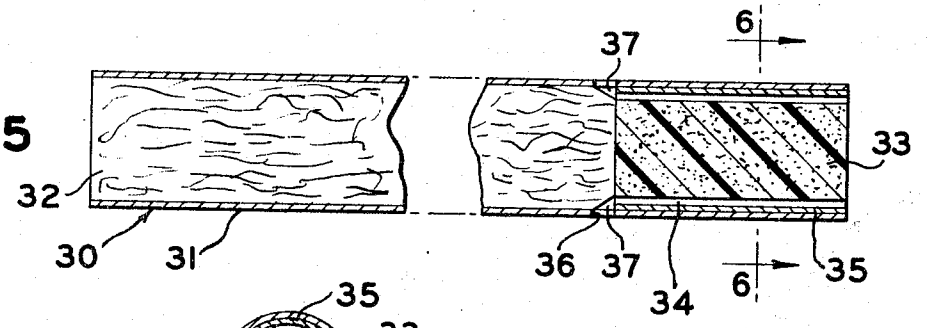
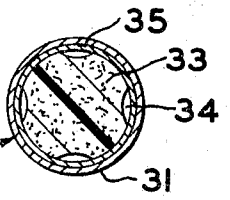


FIG.6



INVENTOR.

BESSIE DE SIMONE

BY Frank C. Leach Jr.

United States Patent Office 3,324,862 Patented June 13, 1967

3,324,862

SMOKING DEVICE

Bessie De Simone, 284 Washington St., Haverhill, Mass. 01830

Filed Aug. 31, 1964, Ser. No. 393,040
4 Claims. (Cl. 131—10.5)

This invention relates to a smoking device and, more particularly, to an improved construction of cigarettes, cigars, and similar smoker's articles.

The smoking of tobacco is recognized by various authorities as injurious to the delicate membranes of the nose, throat, and lungs of smokers. The smoking of tobacco is credited with causing cancer of the lips, mouth, throat, lungs larynx, and esophagus. It also is credited with inducing various types of circulatory diseases. Notwithstanding the foregoing, the smoking of tobacco is widespread.

The damage is due to the smoke entering the mouth, throat, and lungs of the smoker. Cigarette smoke is a heterogeneous mixture of gases, uncondensed vapors, and liquid particulate material. For purposes of investigating chemical composition and biological properties, cigarette smoke is separated into a particulate phase and a gas phase.

The various types of filters, which are presently employed with cigarettes, remove a portion of the particles in the particulate phase. However, they are not effective against the gas phase of cigarette smoke.

Since the gas phase accounts for 60 percent of total cigarette smoke, it is desirable to reduce the dangers from the gas phase as well as the particulate phase without completely eliminating the effects, which the smoker desires. Otherwise, the smoker will not utilize the safety device.

One component of the gas phase is carbon monoxide, which has a concentration of 42,000 p.p.m. The safe level of carbon monoxide for industrial exposure is 100 p.p.m. when based on a time-weighted average concentration for a normal work day.

Another component found in the gas phase of the cigarette smoke is hydrogen cyanide, which is a respiratory enzyme poison. Tests have indicated that the concentration of hydrogen cyanide in cigarette smoke is 1,600 p.p.m. whereas the safe level for industrial exposure, as mentioned in relation to carbon monoxide, is 10 p.p.m. Thus, it is desirable to reduce the concentration of these various components of the gas phase when they enter the mouth of the smoker to decrease the danger to the smoker.

The present invention satisfactorily solves this problem by introducing cool air into the mouth of the smoker whenever the smoker inhales on the cigarette. By the use of the present invention, the concentration of all of the harmful particles of the gas phase is reduced. Furthermore, the smoker still receives the taste effects of the cigarette smoke but they are diluted to provide protection to the smoker.

Additionally, the cool air entering the smoker's mouth directly results in a lowering of temperatures in the smoker's mouth, throat, and lungs. This produces a more desirable smoking effect.

An object of this invention is to provide a smoker's article construction in which cool air is supplied directly to the mouth of a smoker when he inhales.

Another object of this invention is to provide a smoker's article construction that makes smoking of the article less harmful.

Other objects of this invention will be readily perceived from the following description.

This invention relates to a smoker's article comprising a flexible wrapper having tobacco contained therein. The article has a plurality of air passages disposed at one end thereof in substantially parallel relationship to its longitudinal axis with the passages being adjacent to the wrapper. The passages have their inlets disposed sufficiently forward of the end of the article to be exterior of the mouth of a smoker when the article is disposed within the mouth of the smoker.

The attached drawing illustrates a preferred embodiment of the invention, in which—

FIGURE 1 is a longitudinal sectional view of a cigarette illustrating one embodiment of the present invention;

FIGURE 2 is a sectional view taken along the line 2—2 of FIGURE 1;

FIGURE 3 is a longitudinal sectional view of a cigarette showing another form of the present invention;

FIGURE 4 is a sectional view taken along the line 4—4 of FIGURE 3;

FIGURE 5 is a longitudinal sectional view of a cigarette disclosing another modification of the present invention; and

FIGURE 6 is a sectional view taken along the line 6—6 of FIGURE 5.

Referring to the drawing and particuluarly FIGURES 1 and 2, there is shown a cigarette **10** having a paper wrapper **11** enclosing tobacco **12** and a filter **14** at one end. A plurality of air passages is formed about the filter **14** by air inlet tubes **15**, which are preferably formed of paper. Any other suitable material may be employed to form the tubes **15** as long as it has sufficient strength to prevent collapse and closing of the air passages, which are formed by the tubes **15**, when the cigarette **10** is held in the mouth of the smoker.

As shown in FIGURE 2, the tubes **15** are preferably oval shaped although they could have other configurations if desired. Furthermore, while four tubes **15** have been shown, it should be understood that the number could be greater or lesser depending on the desired dilution of the smoke an the area of the tubes **15**.

The paper wrapper **11** has a plurality of apertures **16** with each of the apertures **16** providing communication for one of the air passages to the exterior of the wrapper **11** through passages **17** in the tobacco **12**. While the tubes **15** are shown terminating adjacent the end of the filter **14**, it should be understood that the air intake tubes **15** need only have a length sufficient to permit the communicating apertures **16** to be exterior of the mouth of a smoker when the smoker holds the cigarette within his mouth.

Furthermore, while the wrapper **11** is shown as a continuous wrapper, there could be a separate wrapper surrounding the tobacco **12** and another wrapper surrounding the filter **14** and overlapping the wrapper surrounding the tobacco **12**. When used in the claims, the term "wrapper" includes either a single wrapper or a dual wrapper arrangement in which one paper wrapper surrounds the tobacco **12** and the other wrapper surrounds the filter **14** and overlaps the wrapper around the tobacco **12**.

When the smoker holds the cigarette within his mouth and inhales, air readily passes through the apertures or openings **16** in the wrapper **11** and through the air passages, which are formed within the air inlet tubes **15**, into the mouth of the smoker. This cool air serves to reduce the temperature of the smoke within the mouth of the smoker along with diluting the injurious components of the gas phase of the cigarette smoke.

The modification of FIGURES 3 and 4 includes a cigarette **20** having a paper wrapper **21**. The wrapper **21** encloses tobacco **22** and a filter **23** at one end. As explained with respect to the embodiment of FIGURES 1 and 2, the wrapper **21** may be either a single wrapper or two wrappers.

A plurality of air inlet tubes **24** is attached to the exterior of the wrapper **21** by a suitable adhesive such as glue, for example. As shown in FIGURE 4, there are four air inlet tubes **24** but the number may be increased or decreased as explained with respect to FIGURES 1 and 2.

The air inlet tubes **24** are preferably formed of paper of sufficient strength to prevent the closing of the air passages, which are formed by the tubes **24**, when the cigarette **20** is disposed within the mouth of the smoker. If desired, other material than paper may be employed as long as it has the required structural characteristics.

A third form of the invention is disclosed in FIGURES 5 and 6 wherein there is shown a cigarette **30** having a paper wrapper **31**. The wrapper **31** encloses tobacco **32** and a filter **33** at one end.

In the cigarette **30**, air passages **34** are formed by creating depressions extending the length of the filter **33** along its periphery. Thus, the air inlet tubes are eliminated. However, the filter **34** is surrounded by a shell **35**, which is preferably formed of paper, to prevent the passages **34** from being closed when the cigarette **30** is held in the mouth of the smoker.

In order to provide inlets to the passages **34**, the wrapper **31** has a plurality of apertures or openings **36** therein. The number of apertures **36** is equal to the number of air passages **34** with each of the apertures **36** communicating with one of the air passages **34** through passages **37** in the tobacco **32**. As previously mentioned with respect to the wrappers **11** and **21**, the paper wrapper **31** may be either a continuous wrapper or two separate wrappers.

When the smoker inhales on the cigarette **30**, cool air enters the apertures **36** and flows through the passages **34** into the mouth of the smoker. This air cools the smoke and dilutes the harmful components of the gas phase of the cigarette smoke as previously mentioned.

While the present invention has been described with respect to a cigarette having a filter, it will be readily understood that the modifications of FIGURES 1, 2, and 3, 4 may be easily employed with a cigarette not having a filter. Furthermore, the embodiment of FIGURES 1, 2 and 3, 4 also may be easily used with other smoker's articles such as cigars, for example.

An advantage of this invention is that it dilutes the ratio of the various harmful components of the gas phase of the cigarette smoke such as carbon monoxide, for example, to air. Another advantage of this invention is that it reduces the temperature of the cigarette smoke in the mouth of the smoker.

For purposes of exemplification, particular embodiments of the invention have been shown and described according to the best present understanding thereof. However, it will be apparent that changes and modifications in the arrangement and construction of the parts thereof may be restorted to without departing from the spirit and scope of the invention.

I claim:

1. A smoker's article comprising a flexible continuous wrapper, tobacco contained within said wrapper, a plurality of hollow tubes disposed within said wrapper at one end thereof, said tubes being separate from said wrapper and being disposed in substantially parallel relationship to the longitudinal axis of said article and to each other, said wrapper being uninterrupted in a transverse direction in the region of said tubes, each of said tubes being formed of a material to prevent collapse and closing thereof when said article is disposed within the mouth of a smoker, said wrapper having a plurality of apertures therein equal in number to the number of said tubes, separate passages formed in said tobacco to connect each of said apertures to a corresponding one of said tubes, said tubes being adjacent said wrapper, and said apertures being disposed sufficiently forward of the end of said article to be exterior of the mouth of the smoker when said article is disposed within the mouth of the smoker.

2. A smoker's article comprising a flexible continuous wrapper, tobacco contained within said wrapper, at least four oval-shaped hollow tubes disposed within said wrapper at one end thereof and equally angularly spaced from each other, said tubes being separate from said wrapper and being disposed in substantially parallel relationship to the longitudinal axis of said article and to each other, said wrapper being uninterrupted in a transverse direction in the region of said tubes, each of said tubes being formed of a material to prevent collapse and closing thereof when said article is disposed within the mouth of a smoker, said wrapper having a plurality of apertures therein equal in number to the number of said tubes, separate passages formed in said tobacco to connect each of said apertures to a corresponding one of said tubes, said tubes being adjacent said wrapper, and said apertures being disposed sufficiently forward of the end of said article to be exterior of the mouth of the smoker when said article is disposed within the mouth of the smoker.

3. A smoker's article comprising a flexible continuous wrapper, tobacco contained within said wrapper, a filter within said wrapper at one end thereof, a plurality of hollow tubes disposed within said wrapper at said filter end, said tubes being separate from said wrapper and being disposed in substantially parallel relationship to the longitudinal axis of said article and to each other, said wrapper being uninterrupted in a transverse direction in the region of said tubes, each of said tubes being formed of a material to prevent collapse and closing thereof when said article is disposed within the mouth of a smoker, said wrapper having a plurality of apertures formed therein equal in number to the number of said subes, separate passages formed in said tobacco to connect each of said apertures to a corresponding one of said tubes, said tubes being adjacent said wrapper and extending for the length of said filter, and said apertures being disposed forward of said filter so as to be exterior of the mouth of the smoker when said article is disposed within the mouth of the smoker.

4. A smoker's article comprising a flexible continuous wrapper, tobacco contained within said wrapper, a filter within said wrapper at one end thereof, at least four oval-shaped hollow tubes disposed within said wrapper at said filter end and equally angularly spaced from each other, said tubes being separate from said wrapper and being disposed in substantially parallel relationship to the longitudinal axis of said article and to each other, said wrapper being uninterrupted in a transverse direction in the region of said tubes, each of said tubes being formed of a material to prevent collapse and closing thereof when said article is disposed within the mouth of a smoker, said wrapper having a plurality of apertures formed therein equal in number to the number of said tubes, separate passages formed in said tobacco to connect each of said apertures to a corresponding one of said tubes, said tubes being adjacent said wrapper and extending for the length of said filter, and said apertures being disposed forward of said filter so as to be exterior of the mouth of the smoker when said article is disposed within the mouth of the smoker.

References Cited

UNITED STATES PATENTS

1,718,122	6/1929	De Shon	131—9
2,226,473	12/1940	Kennedy	131—10
2,988,088	6/1961	Schur	131—10
3,240,213	3/1966	Miller	131—9

FOREIGN PATENTS

240,650	10/1962	Australia.
1,349,992	12/1963	France.
864,247	3/1961	Great Britain.
867,669	9/1961	Great Britain.

ALDRICH F. MEDBERY, *Primary Examiner.*

SAMUEL KOREN, H. P. DEELEY, JR., *Assistant Examiners.*