Aug. 22, 1967 S. A. MOREHOUSE 3,336,928

SMOKING ARTICLE

Filed May 7, 1964

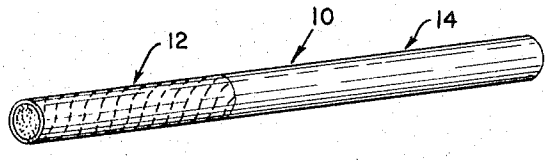


Fig. 1

Fig. 2

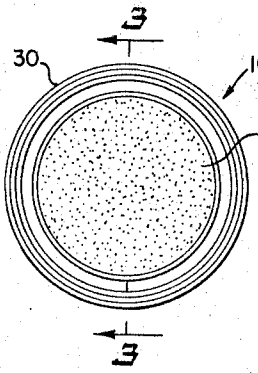


Fig. 3

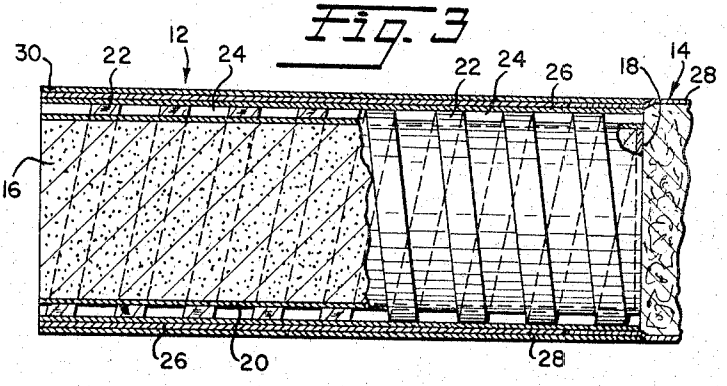


Fig. 4

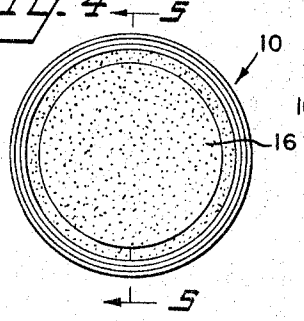
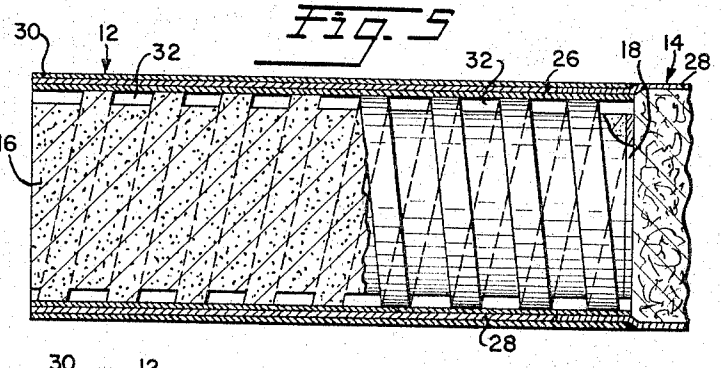


Fig. 5



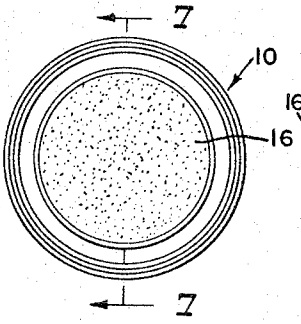


Fig. 6

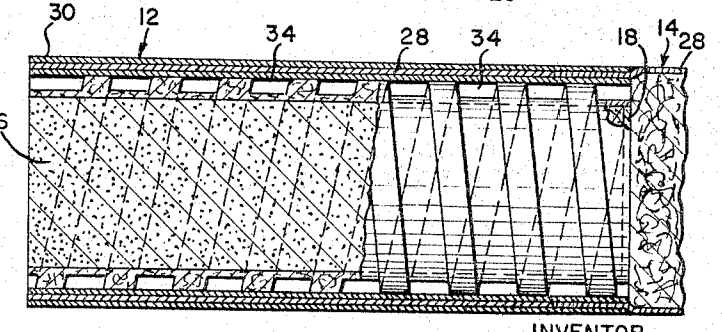


Fig. 7

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3,336,928

SMOKING ARTICLE

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8 Claims. (Cl. 131—10.5)

The present invention relates to improvements in cigarettes and is concerned more particularly with improved smoking tips for cigarettes.

It is well known that cigarette smoke contains or entrains materials alleged to be injurious to the health of the smoker and that many efforts have heretofore been made to remove such harmful materials before the smoke enters the mouth. Such prior art efforts principally have embraced the use of filters of various materials and constructions through which the smoke is passed. Such filters have many attendant disadvantages, among them, the failure to remove or effectively to remove harmful materials, impedance of the smoke and ill effect upon the taste or flavor of the tobacco smoke.

The present invention has for its principal object the provision of a smoking tip which avoids all the disadvantages of various filters and similar prior art devices and which in fact effectively removes harmful materials entrained with the smoke.

The invention in general embodies a structure including a spiral path for passage of the smoke for generation of centrifugal force in the smoke to separate undesired entrained materials, and absorbent materials adjacent the spiral path for absorbing the undesired materials so separated from the smoke.

Other objects and advantages will be apparent from the following detailed description taken in conjunction with the accompanying drawings wherein preferred embodiments of the invention are selected for exemplification.

In the drawings:

FIG. 1 is a perspective view of a cigarette having a smoking tip constructed and arranged in accordance with the invention;

FIG. 2 is an enlarged front end view of FIG. 1;

FIG. 3 is a fragmentary sectional view taken on the line 3—3 of FIG. 2;

FIG. 4 is a view similar to FIG. 2 but showing a modified form of the invention;

FIG. 5 is a fragmentary sectional view taken on the line 5—5 of FIG. 4;

FIG. 6 is a view similar to FIGS. 2 and 4 but showing a further modified form of the invention; and

FIG. 7 is a fragmentary sectional view taken on the line 7—7 of FIG. 6.

Referring more particularly to the drawings, wherein like numerals refer to like parts, the cigarette designated in its entirety at **10** in FIG. 1 is composed of a forward smoking tip **12** and the usual integral rearward tobacco containing smoke generating portion **14**.

The invention resides in the smoking tip portion **12** of the cigarette which is capable of a wide variety of specific constructions, three of which have been illustrated. Essentially, however, all forms of the smoking tip will include an elongated centrally disposed core of absorbent material the inner end of which is sealed or other means is provided to prevent the smoke from passing through the body of the core and to divert the smoke in a spiral path around the periphery of the core. The spiral path surrounding the core imparts a centrifugal force to the smoke and is faced on its inner and outer sides by absorbent material for absorbing materials separated from the spiraling smoke.

The forms of the invention illustrated show a smoking tip having a central cylindrical core **16** of suitable rigid absorbent material preferably carbonaceous material, activated charcoal, for example. As shown, the inner end of the core **16** is provided with an impervious face **18** to prevent smoke from passing through the body of the core and to divert the smoke around the outer cylindrical surface of the core into a spiral path which may be defined in a number of ways.

In the form of the invention shown in FIGS. 2 and 3 a thin layer of absorbent material **20**, which may be paper, encases the cylindrical wall of the core **16** and around this is wrapped a strip of smoke impervious material **22**, cork for example, in spiral convolutions to form a spiral path **24** for the smoke. An outer layer of absorbent material **26** encircles the convoluted strip **22** to form the outer wall of the spiral path and, if desired, the usual tobacco covering **28** may be extended around the layer **26**. An exterior sleeve **30** of moisture proof material of any suitable material for engaging the lips of the smoker, cork or white cellulose acetate for example, surrounds the paper layers **26** and **28** and may be employed in all constructions of the smoking tip.

In the form of the invention shown in FIGS. 4 and 5 a spiral path **32** is cut, molded or otherwise formed in the outer cylindrical surface of the core **16** so that the core itself may provide the inner absorbent surface of the spiral path. Similar paper layers **26** and **28** may also provide the outer absorbent surface of the spiral path **32**.

In the form of the invention shown in FIGS. 6 and 7 the spiral path **34** may be formed in a sleeve **36** of any suitable absorbent material by molding or corrugating, for example, which encircles the cylindrical wall of the core **16**. The sleeve **36** will then provide the inner absorbent surface for the spiral path **34** and again the layers **26** and **28** may provide the outer absorbent surface.

Although the exterior sleeve is shown as terminating flush with the outer end extremity of the smoking tip construction it is contemplated that it may, if desired, be extended outwardly beyond thereof or that any portion of the tip construction may be recessed within the outer extremity of the exterior sleeve.

It is to be understood that the invention is in nowise limited to the particular forms herein illustrated and described, which are for exemplary purposes only, but embraces all such modifications thereof as may come within the scope of the following claims.

I claim:

1. A smoking article for separating undesired materials entrained with the smoke which comprises, an axial centrally disposed elongated rigid core, an absorbent sleeve in contact with the elongated outer side of said rigid core, an outer absorbent sleeve, means forming a spiral path between said sleeves for the passage of smoke between said absorbent sleeves, the said sleeves absorbing undesired materials from the smoke during its passage through said spiral path.

2. The smoking article of claim **1** wherein the spiral path includes an added element which encircles and is a part of the core.

3. The smoking article of claim **1** wherein the spiral path includes an added spiral element which encircles and is a part of the core.

4. The smoking article of claim **1** wherein the rigid core comprises carbonaceous material.

5. The smoking article of claim **1** wherein the rigid core is charcoal.

6. A smoking article comprising a tubular wrapper, a tobacco charge within said wrapper and at one end thereof, and a filter tip within said wrapper at the other end thereof, said tip comprising a rigid core of absorbent

material, an impervious strip convoluted about said core to form a spiral path for the passage of smoke from said tobacco, a sleeve of absorbent material surrounding and in contact with said strip, means effectively closing off the end of said core adjacent the tobacco charge whereby the smoke is diverted into said spiral path and undesired materials are removed by the absorbent sleeve and core, and an exterior sleeve of moistureproof material surrounding said tubular wrapper in the region of said filter tip.

7. The article of claim 6 wherein the diverting means for the smoke is an impervious surface at the inner end of the core.

8. The smoking article of claim 6 wherein the convoluted strip is a cork material.

References Cited

UNITED STATES PATENTS

139,880	6/1873	Davis	131—209
636,088	10/1899	Voron	131—10
636,293	11/1899	Schossow	131—217
1,468,681	9/1923	Uytenbogaart	131—217 X
1,513,415	10/1924	Neiswender	131—209
1,985,365	12/1934	Dexter	131—209 X
2,132,289	10/1938	DeVita	131—209
2,867,219	6/1959	Hug	131—10
3,066,681	12/1962	Cohn	131—10
3,128,776	4/1964	Bigelow	131—217 X

FOREIGN PATENTS

561,979	11/1957	Belgium.
1,118,860	3/1956	France.
7,677	5/1904	Great Britain.

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