

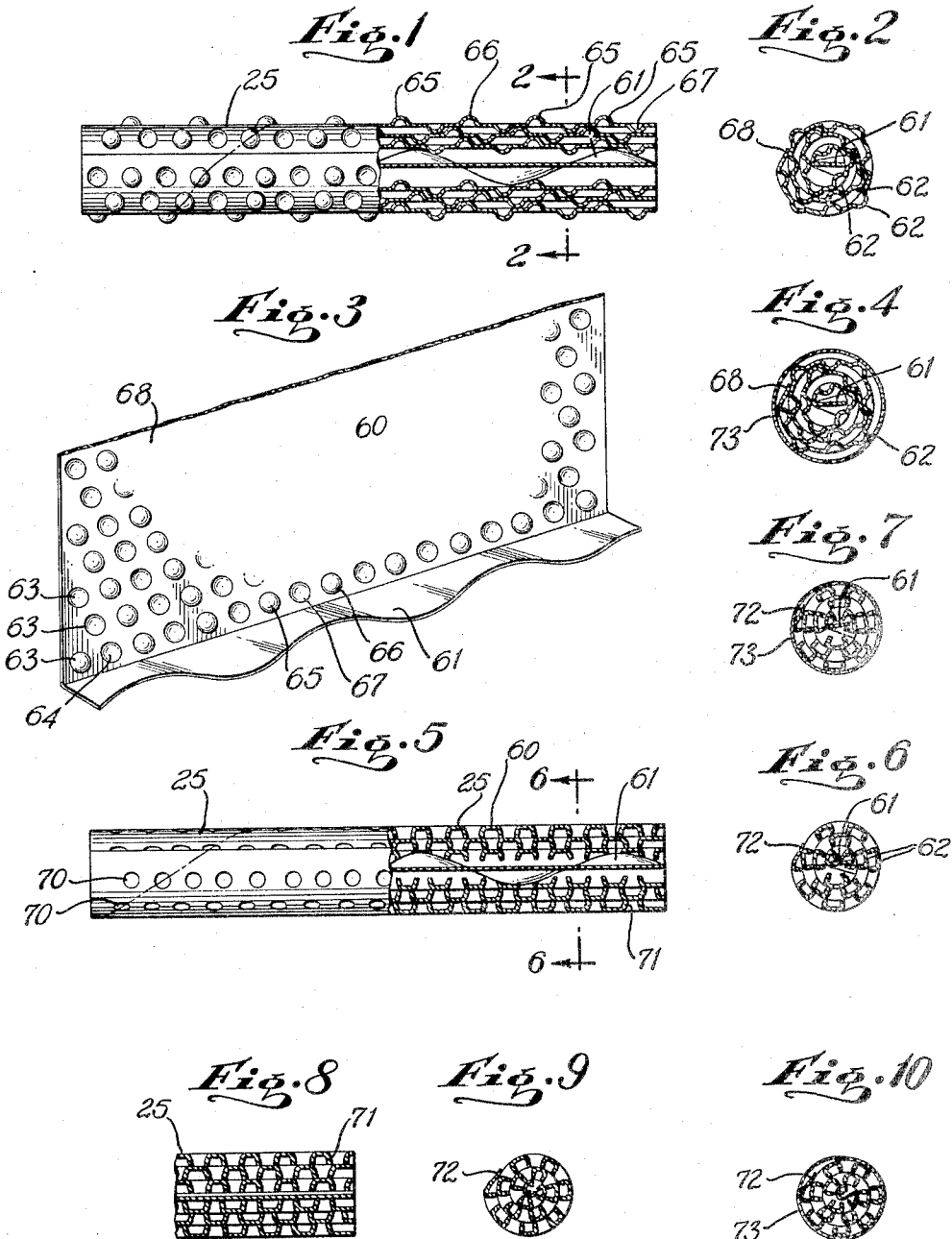
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FILTER FOR PIPES AND CIGAR OR CIGARETTE HOLDERS

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FILTER FOR PIPES AND CIGAR OR
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18 Claims. (Cl. 131—12)

The present invention is directed to improved absorbent filter cartridges removably disposed in the path of travel of the smoke fumes traversing the shank of a tobacco smoking pipe or the bore of a cigar or cigarette holder.

It is an object of the invention to provide a novel and improved filter absorbent cartridge having a multiplicity of relatively restricted and narrow tortuous passages through which the smoke fumes pass, the passages being interrupted by staggered or spirally arranged baffles in the form of a plurality of hollow projections with which the smoke fumes impinge, the projections serving to disassociate the solid particles from the smoke fumes and/or absorb the products of condensation thereof whereby the smoke fumes in reaching the smoker will be relatively dry, cool and sweet.

It is a further object of the invention to provide an absorbent filter cartridge formed from relatively thin sheet absorbent paper material having a multiplicity of staggered knob shaped or semispheroidal embossments or projections.

It is a further object of the invention to provide an absorbent tubular filter cartridge having a relatively thin moisture absorbing central and sinuously disposed baffle or web extending the entire length of the bore of the cartridge.

It is another object of the invention to provide a moisture absorbent cartridge formed from relatively thin sheet and moisture absorbent paper having a plurality of struck out projections each constituting a substantially miniature annular flange which serves as spacer means for adjacent coils of the cartridge after the sheet paper has been wound upon itself.

Other features, advantages and objects of the invention are in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the features of construction, combination of elements, arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the application thereof will be indicated in the appended claims.

The present invention will be best understood from the following discussion of the several typical structural embodiments, reference being had to the accompanying drawing in which:—

Fig. 1 is a longitudinal view of one form of filter cartridge, partly shown in section.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a view in perspective of the absorbent blank or sheet of paper which is rolled upon itself to provide the cartridge illustrated in Fig. 2.

Fig. 4 is a view similar to Fig. 2 but illustrating the cartridge disposed within an absorbent casing.

Fig. 5 illustrates a longitudinal view of another form of filter cartridge, partly shown in section.

Fig. 6 is a sectional view on the line 6—6 of Fig. 5.

Fig. 7 is a view similar to Fig. 6 showing the cartridge secured to a cylindrical absorbent casing.

Fig. 8 is a fragmentary longitudinal sectional view of another form of cartridge.

Fig. 9 is an end view of Fig. 8.

Fig. 10 is a view similar to Fig. 8 illustrating the cartridge of Figs. 8 and 9 arranged within and secured to a hollow cylindrical casing.

The absorbent filter cartridge 25 according to the invention is made from a relatively thin sheet of moisture absorbent or tissue paper or blank 60 which is rolled upon itself. As shown in Figs. 1 and 5, blank 60 is provided with a serpentine or sinuous moisture absorbent flange or baffle member 61 about which the body of the blank is rolled to form a plurality of contiguous and closely spaced spiral coils or layers as 62. In the form according to Figs. 1 to 4 inclusive the body of the blank is provided with a plurality of spaced rows 63 of knob shaped hollow embossments or projections or indentations as 64 so arranged in staggered formation that the alternate embossments, as 65 and 66 of a row extend in the same direction while the adjacent embossments, as 65 and 67 extend in opposite directions. In other words, the adjacent coils of the cartridge form a relatively narrow irregular or tortuous channel in which the smoke travels and is treated, the staggered embossments serving as absorbent baffles to the smoke. In effect, each coil of the cartridge may be considered as an absorbent tube forming with an adjacent coil an irregular shaped fume conducting passageway, the end or terminal 68 of the blank may be secured to the penultimate coil by the utilization of any appropriate adhesive.

In the form according to Figs. 5-10 inclusive instead of providing embossments of the type shown in Fig. 1, the blank or sheet absorbent paper before being rolled is provided or formed with a plurality of rows as 70 of staggeredly arranged struck out annular projections 71. These projections are conveniently and quickly formed in any well known manner. One method of forming these projections resides in the piercing of a paper by the point of a lead pencil or pointed implement. The invention, however, is not limited

ited to any particular method of forming these projections.

After the annular projections are formed, the body of the perforated blank is coiled closely about the absorbent serpentine flange or web 61, the projections serving as absorbing baffles to divide the smoke streams and also perform the function of spacers for adjacent coils of the tubular cartridge. When the undulating or waving blank of Fig. 1 or Fig. 5 is wound upon itself, it will be noted that certain of the embossments or annular flanges are disposed spirally, see for example the dash and dot lines in these views. It will also be noted that the serpentine absorbing flanges 61 of Figs. 1 and 5 extend across the entire length of their respective cartridge and then divide the bore of the innermost coil thereof into a plurality of undulating or sinuous passages.

In the form shown in Figs. 8-10, the absorbent blank utilized in forming the cartridge, is of the type shown in Figs. 5 and 6, however, with the serpentine central flange 61 omitted. The blank without without the serpentine flange is closely wound upon itself to form a multiplicity of longitudinally disposed irregular channels which are interrupted by the spaced and staggered annular flanges of the several perforated convolutions or coils, the end or terminal 72 of the last coil of each cartridge being suitably attached to the penultimate and associated coil thereof.

If desired each of the forms disclosed may be appropriately secured within an absorbent cylindrical casing 73 which is substantially coextensive with the length of its cartridges and which may be made of a suitable paper or the like, the outer wall of the cartridge encompassed by a moisture absorbent tube defines with the latter smoke conducting longitudinally disposed passages.

It will be noted that the baffle member 61 in each of the embodiments disclosed is arranged substantially diametrically of and longitudinally of the bore of its cartridge and has a width greater than its thickness.

While the invention has been described in detail and many modifications and specific applications thereof have been referred to, the invention herein disclosed is not limited to such modifications or to such specific applications and it is to be understood that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A filter absorbent cartridge for tobacco smoking implements comprising a serpentine moisture absorbing uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin absorbent paper blank associated with said member, said blank having a plurality of rows of indentations substantially parallel to the adjacent longitudinal edge of said member, the alternate indentations of a row extending in the same direction, the adjacent indentations of a row extending in opposite directions, said indentations of adjacent rows being staggered, said blank being adapted to be coiled about said member to provide a plurality of spaced absorbent layers defining a plurality of relatively restricted undulating passages, the terminal portion of said blank being secured to the penultimate coil of said cartridge.

2. A filter absorbent cartridge for tobacco

smoking implements comprising a serpentine moisture absorbing uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin absorbent paper blank connected to said member, said blank having a plurality of rows of indentations substantially parallel to the adjacent longitudinal edge of said member, the alternate indentations of a row extending in the same direction, the adjacent indentations of a row extending in opposite directions, said indentations of adjacent rows being staggered, said blank being adapted to be coiled about said member to provide a plurality of spaced absorbent layers defining a plurality of relatively restricted undulating passages, the terminal portion of said blank being secured to the penultimate coil of said cartridge, and a cylindrical casing encompassing said cartridge.

3. A filter absorbent cartridge for tobacco smoking implements comprising a serpentine moisture absorbing uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin and elongated absorbent paper blank associated with said member, said blank having a plurality of rows of indentations substantially parallel to the adjacent longitudinal edge of said member, the alternate indentations of a row extending in the same direction, the adjacent indentations of a row extending in opposite directions, said indentations of adjacent rows being staggered, said blank being adapted to be coiled about said member to provide a plurality of spaced absorbent layers defining a plurality of relatively restricted undulating passages, the terminal portion of said blank being secured to the penultimate coil of said cartridge, and a cylindrical moisture absorbing casing encompassing said cartridge and coextensive with the latter and defining therewith smoke conducting passages.

4. A filter absorbent cartridge for tobacco smoking appliances comprising a serpentine moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin moisture absorbent paper blank associated with said member, said blank having a plurality of rows of perforations each bounded by an annular flange, said flanges of the several rows extending in the same direction, said blank being adapted to be coiled about said serpentine member to provide a plurality of spaced coils, said annular flanges constituting baffle means to the passage of smoke traversing an irregular passage between contiguous coils of said cartridge, the terminal of said blank being secured to the penultimate coil thereof.

5. A filter absorbent cartridge for tobacco smoking appliances comprising a serpentine moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin moisture absorbent paper blank connected to said member, said blank having a plurality of rows of perforations each bounded by an annular flange, said flanges of the several rows extending in the same direction, said blank being adapted to be coiled about said serpentine member to provide a plurality of spaced coils, said annular flanges constituting baffle means to the passage of smoke traversing an irregular passage between contiguous coils of said cartridge, the terminal of said blank

being secured to the penultimate coil thereof, and a cylindrical casing encompassing said cartridge.

6. A filter absorbent cartridge for tobacco smoking appliances comprising a serpentine moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness, a relatively thin and elongated moisture absorbent paper blank associated with said member, said blank having a plurality of rows of perforations each bounded by an annular flange, said flanges of the several rows extending in the same direction, said blank being adapted to be coiled about said serpentine member to provide a plurality of spaced coils, said annular flanges constituting baffle means to the passage of smoke traversing an irregular passage between contiguous coils of said cartridge, the terminal of said blank being secured to the penultimate coil thereof, and a cylindrical moisture absorbing casing encompassing said cartridge and coextensive with the length thereof and defining therewith smoke conducting passages.

7. A filter cartridge for tobacco smoking appliances comprising, a relatively thin moisture absorbent body having a plurality of rows of perforations each bounded by an annular flange, the flanges of adjacent rows being staggered and extending in the same direction, said body being adapted to be rolled upon itself to provide a plurality of convolutions and forming a plurality of closely associated smoke conducting passages staggeredly interrupted by said flanges, the terminal of said body being secured to the penultimate convolution of said body.

8. A filter cartridge for tobacco smoking appliances comprising, a relatively thin and elongated moisture absorbent body having a plurality of rows of perforations each bounded by an annular flange, the flanges of adjacent rows being staggered and extending in the same direction, said body being adapted to be rolled upon itself to provide a plurality of convolutions and forming a plurality of closely associated smoke conducting passages staggeredly interrupted by said flanges, the terminal of said body being secured to the penultimate convolution of said body, and a cylindrical casing encompassing said cartridge.

9. A filter cartridge for tobacco smoking appliances comprising, a relatively thin moisture absorbent substantially cylindrical body having a plurality of rows of perforations each bounded by an annular flange, the flanges of adjacent rows being staggered and extending in the same direction, said body being adapted to be rolled upon itself to provide a plurality of convolutions and forming a plurality of closely associated smoke conducting passages staggeredly interrupted by said flanges, the terminal of said body being secured to the penultimate convolution of said body, and a cylindrical moisture absorbent casing encompassing said cartridge and coextensive with the length thereof and defining therewith smoke conducting passages.

10. A filter absorbent hollow cartridge for tobacco smoking appliances comprising an internally disposed moisture absorbing serpentine un-

interrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness extending longitudinally and transversely of the bore of said cartridge.

11. A filter absorbent hollow cartridge comprising a plurality of coiled layers of moisture absorbent material, and a moisture absorbent undulating uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness traversing the bore of said cartridge.

12. A filter absorbent hollow cartridge comprising a relatively thin moisture absorbent blank coiled about itself to define a hollow bore and a moisture absorbent serpentine uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness extending longitudinally of said bore.

13. A filter absorbent hollow cartridge comprising a blank of moisture absorbent material coiled about itself to provide a plurality of spaced absorbent layers defining a plurality of spaced smoke conducting passages, and an undulating moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness longitudinally disposed relative to the bore of said cartridge.

14. A filter cartridge comprising a serpentine moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness and a relatively thin moisture absorbent blank connected to said member and coiled about the latter.

15. A filter cartridge comprising a serpentine moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness and a relatively thin moisture absorbent blank connected to said member and coiled about the latter to define a plurality of irregular passages between adjacent coils of said blank.

16. A filter cartridge comprising an undulating moisture absorbent uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness and a moisture absorbent blank having a plurality of spaced rows of projections, said member having a connection with said blank coiled about said member to define a plurality of longitudinally disposed spaced and relatively restricted passages between adjacent coils of said blank.

17. A filter cartridge having a moisture absorbent undulating uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness and a moisture absorbent blank connected thereto.

18. A filter cartridge having a moisture absorbent undulating uninterrupted longitudinally and substantially diametrically extending baffle member having a width greater than its thickness and a moisture absorbent blank connected thereto and comprising a plurality of spaced projections extending in the same direction.

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