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S. ALLEY

2,159,121

FILTER TIP FOR CIGARETTES

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Fig. 1.

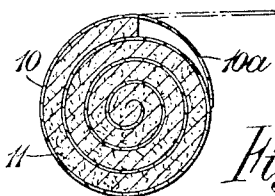


Fig. 2.



Fig. 3.

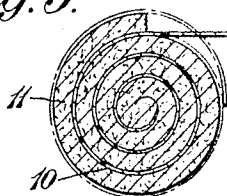


Fig. 4.

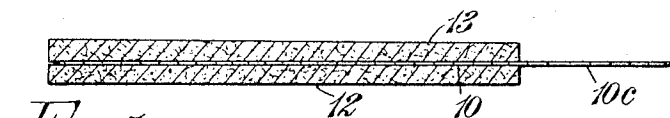


Fig. 5.

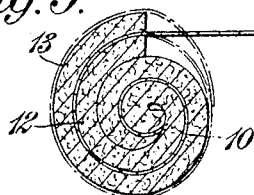


Fig. 6.



Fig. 7.

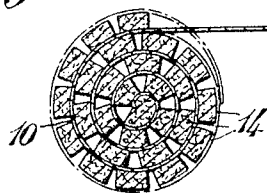


Fig. 8.

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FILTER TIP FOR CIGARETTES

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10 Claims. (Cl. 131—52)

This invention relates to filter tips, plugs or the like for cigarettes of the type in which the filtering medium is coiled spiral fashion to form the tip, and an object of the invention is to provide an improved construction of filter tip where-

by a filter tip cigarette is capable of drawing freely while providing a firm end for the cigarette.

According to the invention the improved filter tip is constructed from a composite material comprising a paper strip or other backing material to one side of which a layer of cotton wool or similar filtering medium is secured, the composite material being rolled or coiled so that the paper web or other backing lies on the outside of the coil.

The paper web preferably extends beyond the filtering medium at one end (the outer end when rolled) so as to provide a smooth finish to the rolling and avoid any semblance of a ridge.

The invention also consists in a cigarette filter tip or plug as hereafter described.

Further features of the invention will be hereinafter described and defined in the claims.

In the accompanying drawing, which is of a diagrammatic nature in which the dimensions are exaggerated for the sake of clearness:

Figure 1 is an elevation of a strip of filter tip material;

Figure 2 shows the strip coiled to form a filter tip;

Figures 3 and 4 are similar views showing a modification;

Figures 5 and 6 are similar views of another modification;

Figures 7 and 8 are similar views of a further modification.

In carrying the invention into effect according to one convenient mode, see Figures 1 and 2, a strip or web 10 of paper or other suitable material of a suitable thickness and length is provided on one side with a preferably thin layer of cotton wool 11 or other suitable filtering medium. The cotton wool layer is secured to the paper web by gum or other suitable adhesive, and at one end of the web extends slightly beyond the paper as at 11a, while at the other end the layer stops short of the paper for a suitable distance to provide a tag end 10a to the paper.

The composite web is coiled up, commencing at the end 11a where the filtering layer overlaps the paper. The coiling is effected with the cotton wool layer inside and when the coiling is completed the tag end 10a overlaps and is secured by a suitable adhesive. This overlapping

finishes off the coil and avoids any ridge formation, while the overlapping of the inner end of the paper web by the filtering medium at 11a forms a core for the coil preventing a direct opening in the centre of the tip. It will be appreciated that in actual practice the tag 10a will lie substantially flat on the adjacent layer of paper and that there will be no gap such as indicated in Figure 2 in which the thickness of the layer of cotton wool is exaggerated.

The width of the composite web may be such as to form a single filter tip or plug or one of double length, or may be such as to form a length of filter tip which is afterwards cut into appropriate lengths.

The coiling of the tip may be effected by the aid of any suitable mechanism.

Instead of effecting the coiling as above described the coiling may be done with the filtering layer outside, see Figures 3 and 4, in which case the tag end 10b of the paper is long enough to form a covering for the outer coil of cotton wool and secure the tag to the paper as indicated.

According to another arrangement, see Figures 5 and 6, filtering layers 12 and 13 of cotton wool or other suitable material may be applied to both sides of the paper web 10, the tag end 10c of the paper web being sufficiently long to enclose the last coil and secure the tag. Here again it will be appreciated that with the proper thickness of the cotton wool layer no gaps or apertures will be formed at the outer end of the coil.

According to a further modification, see Figures 7 and 8, the cotton wool or other filtering material may be applied to the paper web in strip form, the strips 14 lying parallel to the axis of coiling and being slightly spaced apart. With this form also the filtering medium may be applied to both sides of the paper web. When coiled up the spaces between the cotton wool strips will be substantially closed while providing a number of more or less small openings through the tip.

The tag 10d will be of a suitable length according to whether the coiling is started towards or away from the paper web.

A filter tip formed according to the methods hereinbefore described provides a tip through which a cigarette may be freely smoked and yet one which is as firm in the mouth as the end of an ordinary non-tipped cigarette, owing to the interlining of the filtering medium with the

The dimensions of the strips 14 may be uniform through the composite strip as indicated in Figure 7 or may be non-uniform; or there may be a number of strips at the end of the web which is to be the mouth-piece while the remainder is continuous, or vice versa; again there may be a number of spaced strips at each end with an intermediate continuous section, or continuous sections, at the end, with a number of intermediate short strips.

Instead of a flat strip as shown in Figures 1, 3 and 5, the layer of filtering medium may be of a corrugated nature or it may be provided with grooves on one or both sides, such grooves extending parallel to the coiling axis.

According to a further form in which a continuous layer of filtering medium is used, the cotton wool or other filtering medium may be sprayed with a solution of cellulose, or other suitable material which when hardened forms a backing or carrier for the cotton wool or the like. Instead of a solution of cellulose, cellulose dispersions or cellulose derivative lacquers may be used.

Where, in coiling, the cotton wool or other filtering medium lies on the outside, this may be sprayed as above referred to to provide an outer finish to the tip.

I claim:

1. A cigarette filter tip consisting of a single coiled strip of material comprising a paper strip to which a layer of absorbent fibrous filtering material such as cotton wool is secured, the paper and wool being wound upon each other in convolutions in which the paper and wool are substantially co-extensive from the center of the tip to its periphery, said single coiled strip having an integral extension beyond the filtering medium to form a securing tag providing an outer layer of paper on the finished tip.

2. A cigarette filter tip as claimed in claim 1 wherein the cotton wool extends beyond the paper strip at the end remote from said tag, to compensate for differences in the length of convolutions as between the paper and wool, whereby the formation of axially extending voids is prevented.

3. A cigarette filter tip as claimed in claim 1 wherein the layer of cotton wool comprises a series of separated strips extending parallel to the coiling axis.

4. A material for forming coiled filter tips for cigarettes, comprising a strip of paper having a layer of cotton wool secured to one side thereof

and comprising a series of separated strips lying transverse of the paper strip.

5. A material for forming coiled filter tips for cigarettes as claimed in claim 4 wherein the paper strip extends at one end beyond the cotton wool layer to form a securing tag adapted to provide an outer layer of paper on the coiled tip.

6. A cigarette filter tip comprising a coiled strip constituted by a layer of non-filtering material formed as a unitary structure with at least one layer of filtering material, said layers being wound in convolutions adapted to fill the entire space confined by the cigarette wrapper at the mouth end occupied by the filter tip, said tip having an integral initially free extension of said non-filtering material wound upon the filter convolutions and constituting the filter tip a self-sustaining paper-covered structure adapted to be included as such within the cigarette wrapper fabric.

7. A material for forming coiled filter tips for cigarettes, comprising a strip of non-filtering material to one side of which a filtering medium is secured, the non-filtering strip extending beyond the filtering medium to form an integral securing tag adapted to provide an outer layer completely surrounding the tip and confining the filtering medium.

8. A material for forming coiled filter tips for cigarettes, comprising a strip of paper having a layer of fibrous absorbent filtering material, such as cotton wool, secured to one side, the paper projecting beyond the cotton wool to form a securing tag adapted to provide an integral outer layer of paper completely surrounding the tip and confining the filtering medium.

9. A material as claimed in claim 8 wherein the layer of fibrous filtering medium extends beyond the paper strip at the end remote from the tag, being free to form a void-closing mass centrally within the filter tip when the material is rolled upon itself.

10. A material for forming coiled filter tips for cigarettes, comprising a strip of paper having layers of fibrous absorbent filtering medium, such as cotton wool, secured to both sides, the paper having an integral free extension projecting beyond the filtering medium to form a securing tab adapted to provide an integral layer of paper completely surrounding the filter tip, confining first the underlying layer of filtering medium, and confining also the superimposed layer of filtering medium, by means of said initially free extension.

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