July 2, 1957 W. BUTLER 2,797,691

CIGARETTE FILTER

Filed April 4, 1955

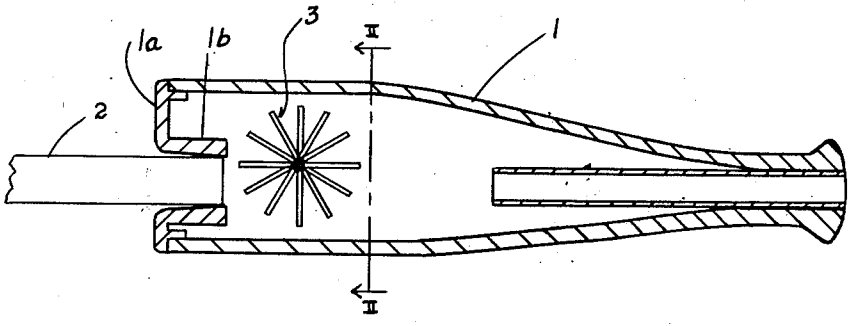


FIG. 1

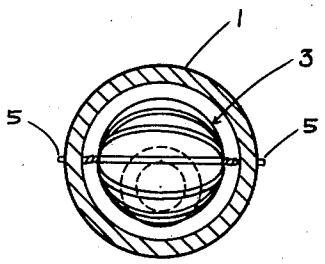


FIG. 2

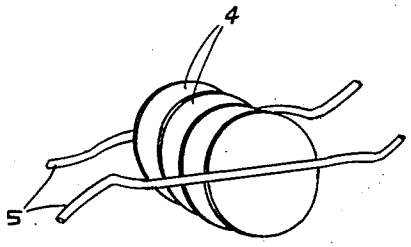


FIG. 3

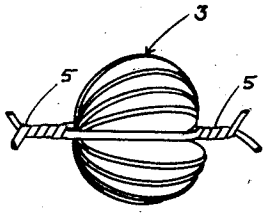


FIG. 4

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CIGARETTE FILTER

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1 Claim. (Cl. 131—207)

My invention relates to a cigarette filter and, more particularly, to one which will more effectively filter nicotine and tars present in cigarette tobacco smoke so as to prevent or greatly minimize their entry into the mouth and throat of the smoker and thus avoid the harmful effects thereof.

An outstanding disadvantage of common types of cigarette filters is that they quickly clog, particularly at the end portion closer to the lit end of the cigarette, while the other end portion remains relatively clean but is rendered ineffective for filtering because the smoke is prevented from passing therethrough by the above mentioned clogged end portion.

An object of my invention is to provide a novel cigarette filter which is devoid of the above named disadvantage and which is substantially clog-proof, and whose filtering surface will become uniformly coated with nicotine and tars so as to provide maximum effectiveness of the available filtering surface.

A more specific object of my invention is to provide a cigarette filter which is rotatable as the result of sucking or drawing action of the smoker, whereby all of the vane-like surfaces of the filter are effective for filtering and whereby minimum resistance is provided against passage of smoke therethrough—also one which provides a cooler smoke.

Other objects and advantages of my invention will become apparent from a study of the following description taken with the accompanying drawing wherein:

Figure 1 is a side cross section of a cigarette holder having eccentrically mounted therein a rotatable filter embodying the principles of my invention,

Figure 2 is a sectional view of the rotatable filter assembly shown in Figure 1 and taken along line 2—2 thereof;

Figure 3 is a perspective and exploded view showing the parts forming rotatable filter 3; and

Figure 4 is a side view of rotatable filter 3 when assembled.

Referring more particularly to the drawing, numeral 1 denotes a cigarette holder having a removable cap 1*a* with a recess 1*b* for holding a cigarette 2. The holder is provided with a rotatable filter 3 in the form of a plurality of radially extending disc-like separate pieces of paper 4 which are held together along a common diameter by means of a pair of twisted wires 5 which also serve as the rotary shaft for the filter. The ends of the wires are twisted and shaped to form cylindrical shaft portions which are mounted in the cigarette holder in such position relative to the mouth piece opening so as to be eccentrically disposed relative thereto in order that sucking action of the smoker will create a pressure on radial portions at one side, only, of the filter and thus cause it to rotate. The filter is mounted by insertion from the cap end when the cap is temporarily removed.

While the above described construction of rotary filter is by way of example only and is found particularly suitable because it is inexpensive and involves simple parts which can be easily and quickly assembled it will be apparent that other types of rotary filters may be used instead and which are deemed to come within the purview of the present invention.

In operation, as the smoker draws smoke by sucking at the bit end of the mouth piece, an unbalanced pressure will be applied on one side of vanes of the rotary filter, that is, pressure will be applied only on one side of the axis and on only one half of the filter so as to cause rotation of the filter. By so rotating, all of the various radially extending blade-like portions of the filters will be exposed to smoke which is drawn somewhat in the form as liquid flowing through a rotary pump and so that all of the surfaces will be effective as filtering areas to trap nicotine and other deleterious tars which are present in the smoke and thus prevent their entry into the mouth and throat of the smoker. The rotating filter has a dual function. It enables exposure of all, instead of a part of its surface areas to the smoke so as to enable complete coating thereof with nicotine and tars and thus require frequent replacement. Also it provides a minimum of resistance to the flow of smoke because it is devoid of openings of capillary size, such as frequently used in conventional type filters, which capillary size openings not only tend to clog faster, but provide substantial resistance against the flow of smoke and require abnormal sucking or drawing. The rotating filter also provides turbulence to the smoke and a cooling effect.

Also the rotary filter provides an attractive novelty in that the cigarette holder may be made of transparent plastic material so as to enable viewing of the rotating filter by others. This provides an attraction to others, and is particularly fascinating to children.

Thus it will be seen that I have provided an efficient rotary cigarette filter which is substantially clog-proof and which will expose a maximum surface area thereof to smoke and thereby absorb a maximum amount of nicotine and tars and avoid the necessity of frequent replacement; furthermore, I have provided a cigarette filter which provides a minimum of obstruction to the flow of smoke while at the same time provides a maximum of filtering effectiveness, also which will provide a relatively cool smoke which is relatively free of nicotine and other deleterious tars normally present in cigarette smoke.

While I have illustrated and described an embodiment of my invention, it will be understood that this is by way of illustration only, and that various changes and modifications may be made within the contemplation of my invention and within the scope of the following claim.

I claim:

A cigarette holder of transparent plastic having at one end a bit and at the other end a recess in which a cigarette may be disposed, said holder being provided with a rotatable filter comprising a plurality of substantially round paper sheets of a diameter smaller than that of the holder and wires securing the sheets together and holding them in assembled relationship by a twist, the wires lying substantially along a diameter of the sheets, the said wires constituting an axle which is adapted to be mounted for rotation in the holder perpendicular to the axis thereof but slightly offset thereto and in the vicinity of the rear of the cigarette holding recess, the sheet halves constituting vanes which are adapted to be rotated by the smoke stream on sucking at the bit end, the said rotation of the vanes being visible through the walls of the holder.

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