

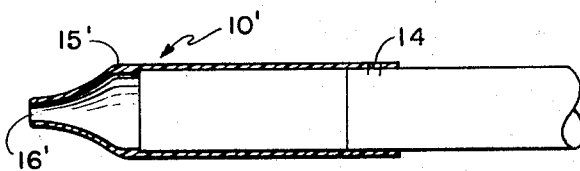
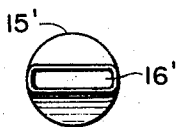
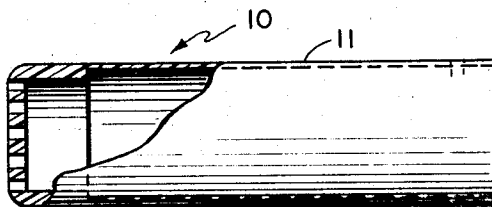
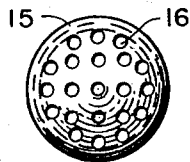
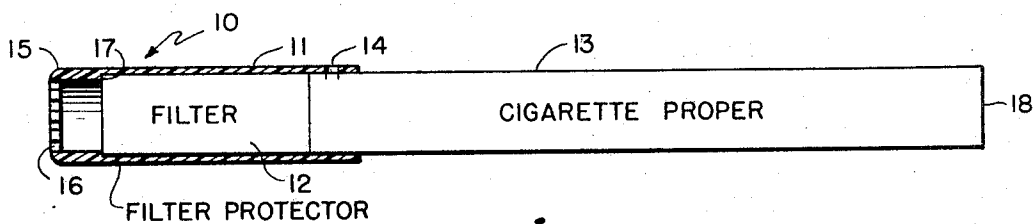
Dec. 27, 1966

C. L. ACKERMAN

3,294,095

CIGARETTE FILTER PROTECTOR

Filed Sept. 26, 1963



INVENTOR.

Carl L. Ackerman

BY

Charles M. Hogan

1

3,294,095

CIGARETTE FILTER PROTECTORCarl L. Ackerman, 3396 Blue Rock Road,
Cincinnati, Ohio 45202

Filed Sept. 26, 1963, Ser. No. 311,893

1 Claim. (Cl. 131-10.7)

The present invention relates to improvements in cigarette construction.

The cigarette manufacturing industry has been characterized in recent years by the growing popularity of filter cigarettes and by the emphasis directed to "cooler smokes."

Filter cigarettes are subject to a major disadvantage in that an inattentive smoker, or one lighting up a filter cigarette while under poor illumination, often lights up the filter end of the cigarette, with resultant discomfort and sometimes embarrassment.

An object of the present invention is to provide a cigarette filter protector which positively prevents burning of the filter end of the cigarette.

A further object of the invention is to provide a cigarette filter construction so formed and arranged that smoke drawn from a cigarette is substantially cooler.

It is also an object of the invention to provide a cigarette filter protector of such material and formation that it is readily adaptable to manufacture in large quantity and incorporation in cigarette structures, and compatible with conventional cigarette packaging practices.

Another object of the invention is to provide a cigarette construction involving filter structures of the character discussed above.

For a better understanding of the present invention, reference is made to the following description of the appended drawings in which are illustrated a preferred and an alternate embodiment of cigarette filter protector in accordance with the invention. In the drawings:

FIG. 1 is an axial sectional view of a cigarette construction including a preferred form of cigarette filter protector in accordance with the invention, shown as incorporated in a cigarette structure;

FIG. 2 is an end view of the FIG. 1 embodiment;

FIG. 3 is an enlarged view, partly broken away, of the FIG. 1 cigarette filter protector per se;

FIG. 4 is an end view of a modified form of filter protector.

FIG. 5 is an axial sectional view of a cigarette construction including the said modified form of cigarette filter protector in accordance with the invention, again shown as incorporated in a cigarette structure.

Referring now to FIGS. 1, 2 and 3, my novel cigarette filter protector is formed as a tubular member or cylindrical sleeve 10. The main portion 11 has a wall thickness of approximately 0.008" to 0.014" and the inner diameter of portion 11 is such that the filter protector tightly and concentrically fits the filter 12 of the cigarette proper 13. The filter protector 10 is preferably formed with a transverse cooling hole 14 of approximately 0.035" in diameter, the center of this hole being located at $\frac{3}{64}$ " from the front edge of the filter protector. At the rear, the filter is formed with an integral cap portion 15. The end of the cap is formed with approximately twenty-one ports 16, satisfactorily arranged for best smoke withdrawal and each of approximately 0.03" diameter. The wall of the cap is thickened to provide a reduced inner diameter approximately $\frac{1}{32}$ " smaller than the inner diameter of the wall portion 11, thereby to provide an annular shoulder 17 against which the filter end of the cigarette abuts. The rear wall of the cap is approximately 0.015" to 0.025" in thickness. The distance from the

2

front of that rear wall to the shoulder 17 is approximately $\frac{3}{16}$ ". The over-all length of the filter is approximately $1\frac{15}{32}$ ".

The specific dimensions and parameters herein mentioned are presented solely for purposes of illustration and not of limitation, and it is intended that the invention cover such modifications and variations as fall within the scope of the invention as defined by the appended claims.

In accordance with the invention, the cigarette filter protector is formed of a material which is compatible with enjoyable smoking and incombustible under cigarette-lighting conditions. I prefer the use of a thermosetting plastic material such as phenol or urea formaldehyde.

Since the filter protector is made of a thermoset resin, which is non-flammable material, and since the filter is spaced approximately $\frac{3}{16}$ " from the cap portion 15 of the protector, the filter is protected under the ordinary conditions of lighting a cigarette, and the sometimes embarrassing mistake of attempting to light the wrong end is easily rectified without throwing the cigarette away.

Additionally, the construction of the filter protector is such that the probability of placement of the open end 18 of the cigarette in the mouth is decreased in that the filter protector end is easily distinguished from the open end of the cigarette, even under conditions of no visibility.

Measurements of various filter cigarettes presently on the market indicate a variation in filter length between $2\frac{29}{32}$ " and $2\frac{25}{32}$ ", approximately, and a variation in over-all cigarette length between $3\frac{1}{8}$ " to $3\frac{5}{16}$ ".

Attention is now directed to the fact that the cigarette protector extends beyond the cooling hole by a distance between $\frac{1}{8}$ " and $\frac{3}{16}$ ". The cigarette paper is pierced through at the point where its wall registers with the cooling hole, permitting outside air to mix with and to cool the smoke.

The filter protector in accordance with the invention can be applied to the filter cigarette in numerous ways, as by pressing it in place. As a further example, the filter protector can be coated onto a filter cigarette.

In the description of the alternative embodiment illustrated in FIGS. 4 and 5, identical reference numerals are utilized to designate elements identical to those referred to in FIGS. 1, 2 and 3, and like references primed are utilized to identify modified elements or features. In the embodiment of FIGS. 4 and 5, the cap portion of the filter protector 10' is tapered toward the consumer end as shown at 15' and a single opening 16' is substituted for the plurality of openings 16 illustrated in FIG. 2.

The filter protector extends beyond the filter proper and snugly engages a part of the cigarette proper. The paper of the cigarette proper is pierced in continuity with hole 14, in each embodiment. It is reiterated that the piercing of the paper of the cigarette at the zone in registry with hole 14 permits outside air to mix with and to cool the smoke.

The opening 16' has a long dimension of approximately .275" to .3" and a short dimension of approximately .05" to .07". The invention contemplates that the novel cigarette construction be marketed as such, that is, a construction consisting of the cigarette proper, the filter, and the filter protector.

While there have been shown those at present considered to be the preferred embodiments of a filter protector in accordance with the invention, it will be understood by those skilled in the art that various modifications and changes may be made therein without departing from the true scope of the invention as defined in the claim appended hereto.

Having described my invention, I claim:

In a cigarette construction the combination of a cigarette proper comprising a tobacco cylinder and a filter having a conventional filter plug adjacent the tobacco cylinder and a built-in non-combustible protector for discouraging the user from igniting the filter end, comprising: a one-piece thermosetting plastic thimble closely concentrically fitting said filter, said thimble having a cap end formed to provide a plurality of ports for smoking and to extend beyond the consumer end of the filter to distinguish the touch of the filter end of the construction from the end normally lighted, said thimble having its other end extending toward the normally ignited end of the cigarette to provide a margin of protector-tobacco cylinder overlap, said margin and the tobacco cylinder being formed with a cool air-admitting port extending

transversely through said margin and partially through said tobacco cylinder.

References Cited by the Examiner

UNITED STATES PATENTS

1,581,451	10/1925	Knapp	131—4
2,070,831	2/1937	Grundon	131—175
2,693,193	11/1954	Pelletier	131—15
2,695,617	11/1954	Warnberg	131—187
2,980,116	4/1961	Schur	131—15
3,058,476	10/1962	Atkins	131—187
3,118,451	1/1964	Rodrigue	131—11

SAMUEL KOREN, *Primary Examiner*.

MELVIN D. REIN, *Examiner*.