

I. W. TUCKER ET AL

EMBLEMATIZED CIGARETTE FILTER TIP

2 Sheets-Sheet 1

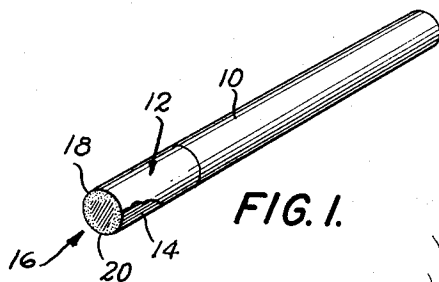


FIG. 1.

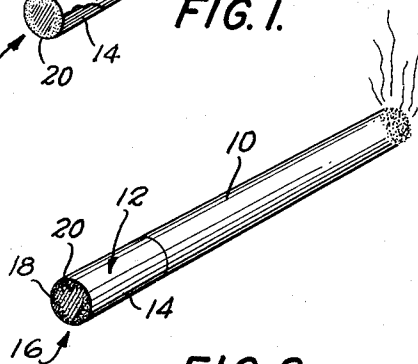


FIG. 2.

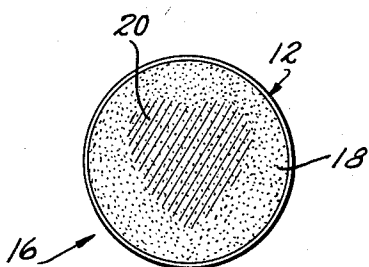


FIG. 3.

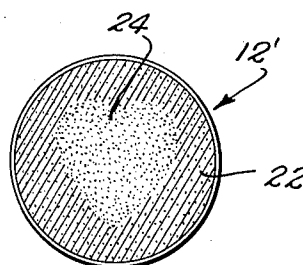


FIG. 4.

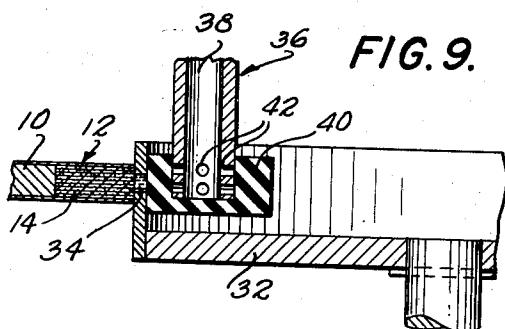


FIG. 9.

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EMBLEMATIZED CIGARETTE FILTER TIP

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2 Sheets-Sheet 2

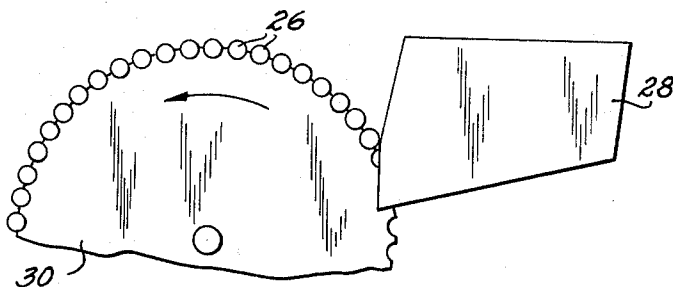


FIG. 5.

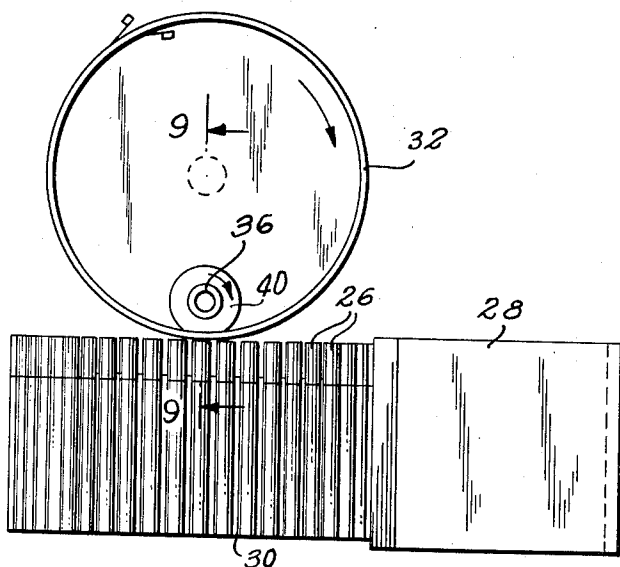


FIG. 6.

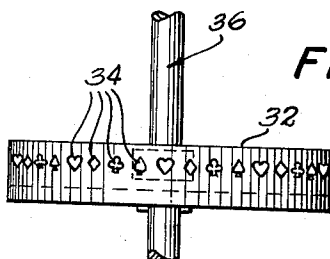


FIG. 7.

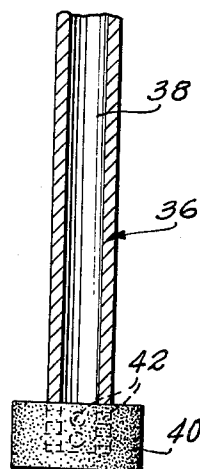


FIG. 8.

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1

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EMBLEMATIZED CIGARETTE FILTER TIP

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4 Claims. (Cl. 131—10)

This invention relates to a novel cigarette filter tip and the method of making the same.

The prime object of the invention centers about the provision of a cigarette filter tip in which an emblem or design in the form of a figure, letter or other insignia is developed in the exposed end of the filter tip as the cigarette is being smoked or consumed.

This object of the invention, more specifically, resides in the production of filter tip cigarettes in which a latent image of an emblem is formed on the exposed end of the filter, which image, preferably invisible (but which may be partly visible) on the unlighted cigarette, is developed by the smoke into distinct or pronounced visibility as the cigarette is lighted and is being consumed.

To the accomplishment of this object and such other objects as may hereinafter appear, the invention relates to the emblemized cigarette filter tip as sought to be defined in the appended claims taken together with the following specification and the accompanying drawings in which:

Fig. 1 is a perspective view of a cigarette having a filter tip which embodies the present invention;

Fig. 2 is a perspective view of the same shown in a lighted condition and depicting the manner in which the emblem in the exposed end of the filter is developed as the cigarette is consumed;

Fig. 3 is a vertical elevational view drawn to an enlarged scale and depicting the filter tip end of the cigarette shown in Fig. 1;

Fig. 4 is a view similar to Fig. 3 and showing a modification thereof;

Fig. 5 is a vertical elevational view of a part of a cigarette machine where the emblems may be applied to the filter tips;

Fig. 6 is a plan view of the machine parts shown in Fig. 5 and showing a stencilling apparatus for applying the emblems to the filter tips in accordance with one method of accomplishing the same;

Fig. 7 is a side elevational view of the stencilling apparatus shown in Fig. 6;

Fig. 8 is a view shown to an enlarged scale of a part of the stencilling apparatus; and

Fig. 9 is a view of said stencilling apparatus taken in cross-section in the plane of the line 9—9 of Fig. 6.

Referring now more in detail to the drawings and having reference first to Fig. 1, the invention is shown embodied in a cigarette 10 having a filter tip 12, the said filter tip comprising a filter body 14 composed of fiber filter material such as natural or synthetic fibers. The filter tip body and particularly the exposed end 16 of the filter body is made to comprise different fiber areas such as 18 and 20, one of which defines a latent image of an emblem or design in the form of a figure, letter or other insignia, the emblem 20 illustrated in Fig. 1 being that of the figure of a heart. The fiber areas 18 and 20 are so constructed or treated as hereinafter set forth that they are differently responsive to the emission of smoke when

2

the cigarette is lighted and is being consumed whereby the latent image is developed into distinct or pronounced visibility as is depicted by the lighted cigarette shown in Fig. 2 of the drawings.

The latent image in the cigarette filter tip may be produced in a number of ways. According to one method there is impressed or imprinted on a part of the exposed end of the filter tip a film-forming material having the design of the desired latent image, this film-forming material forming a semi-pervious coating over the filter fibers of that area, this being depicted in an enlarged scale in Fig. 3 of the drawings, the cross-hatched section representing the applied film-forming material. The film-forming materials that may be used are polyvinyl alcohol, methylcellulose, carboxy methyl cellulose, polyvinylpyrrolidone, and others; and these may be used on any type of filter tip made from synthetic or natural fibers as well as to any other filter tip which possesses a flat and porous end. For synthetic fibers, instead of film-forming substance, the coating may consist of a plasticizer which serves to seal the synthetic fibers together to give the desired pattern or design. On filter tips fabricated from materials such as cellulose acetate, the plasticizer may comprise such substances, for example, as methyl phthalyl ethyl glycollate, triethyl citrate, (di(methoxyethyl) phthalate and others. To accomplish the same effect the latent image may be obtained by coating the area of the filter fibers which outline or border the emblem to be produced, this being depicted in Fig. 4 of the drawings where the exposed end of the filter tip 12' is shown coated as at 22 to produce the latent image 24.

When the cigarette filter tip is produced by this method, upon smoking the cigarette, the latent image which may be partly visible but which is preferably invisible is developed into distinct visibility through the condensation of smoke particles on the tip as the cigarette is consumed, the same being developed by the nicotine and tar coloration of the filter tip uncoated area such as 18 (Figs. 1 to 3). In the modification shown in Fig. 4 the emblem is developed by the nicotine and tar coloration of that part of the filter tip area designated as 24.

In Figs. 5 to 9 of the drawings there is shown an apparatus that may be used for carrying out the method of coating the filter tip ends to produce the latent image. With the use of this apparatus the emblem is imprinted on the exposed filter tip ends. Figs. 5 and 6 show cigarettes 26 being fed from a hopper 28 onto a rotating wheel 30 which hold and suitably space the cigarettes for the printing step. The individual cigarettes in the movement of the wheel move in contact with a rotary stencil 32, the parts moving in the directions indicated by the arrows in these Figs. 5 and 6, the said stencil being formed with a plurality of stencil openings 34 having the design of the emblem which is desired to be imprinted, the said stencil being shown with sequential designs of the figures of a heart, diamond, club and spade.

Associated with the stencil 32 is an applicator 36 for feeding the coating material to the stencil and thence to the filter tip ends. The applicator 36 comprises a hollow shaft 38 through which the film-forming substance is fed, the shaft being provided at its terminal with an applicator tip 40 which may be made of sponge, felt or any other porous substance, the applicator terminal having orifices 42 which feed into the applicator tip 40. The applicator tip may be located slightly off-center toward the rim of the stencil 32, the off-center position introducing a squeezing action to the pliable applicator tip, which latter becomes saturated with the film-forming material and which, in feeding through the stencil openings, imprint and coat the filter tips.

The emblem may also be produced by the method and

3

apparatus described employing however a heat activatable invisible ink as the imprinting medium. Such a heat activatable ink may be for example one containing the following ingredients by weight: Cobalt chloride—3 parts, water—64 parts, and glycerine—1 part. With this modification the latent emblem would also be invisible previous to the smoking of the cigarette, but when the cigarette is smoked to a certain length enough heat would be generated in the smoke stream of the cigarette to develop the pattern of the emblem.

The emblemized cigarette filter tip of the present invention and method of obtaining the same will in the main be fully apparent from the above-detailed description. It will be further apparent that changes may be made in both the product and the method without departing from the spirit of the invention defined in the following claims.

We claim:

1. An emblemized cigarette filter tip comprising a filter body composed of fiber filter material, the exposed end of the filter having impressed over part of the fiber area thereof a non-fibrous substance defining a latent image of an emblem, said substance rendering said impressed area differently responsive to the emission of smoke than the remaining area whereby the latent image is developed by the smoke into visibility as the cigarette is being consumed.

2. An emblemized cigarette filter tip comprising a filter body composed of fiber filter material, the exposed end of the filter having impressed over part of the fiber area thereof a film-forming substance defining a latent image of an emblem, said substance rendering said impressed area differently responsive to the emission of smoke than the remaining area whereby the latent image

4

is developed by the smoke into visibility as the cigarette is being consumed.

3. An emblemized cigarette filter tip comprising a filter body composed of a fiber filter material, the exposed end of the filter having impressed over part of the fiber area thereof a fiber sealing plasticizer defining a latent image of an emblem, said plasticizer rendering said impressed area differently responsive to the emission of smoke than the remaining area whereby the latent image is developed by the smoke into visibility as the cigarette is being consumed.

4. An emblemized cigarette filter tip comprising a filter body composed of fiber filter material, the exposed end of the filter having impressed over part of the fiber area thereof a heat activatable substance defining a latent image of an emblem, said substance rendering said impressed area differently responsive to the emission of smoke than the remaining area whereby the latent image is developed into visibility by the heat of the smoke as the cigarette is being consumed.

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