

April 11, 1967

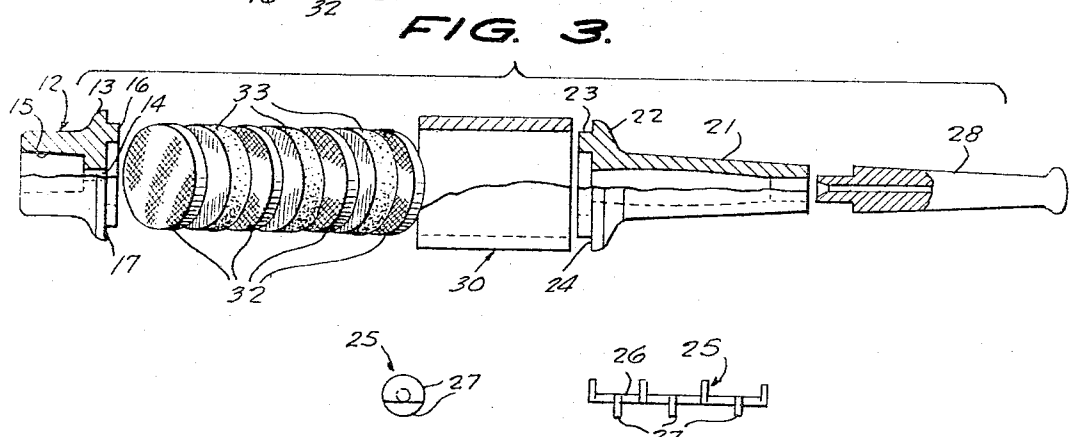
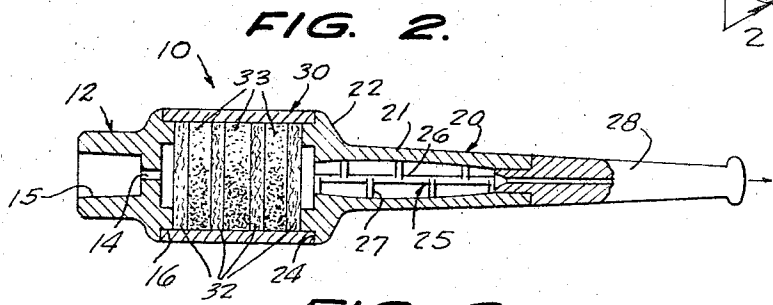
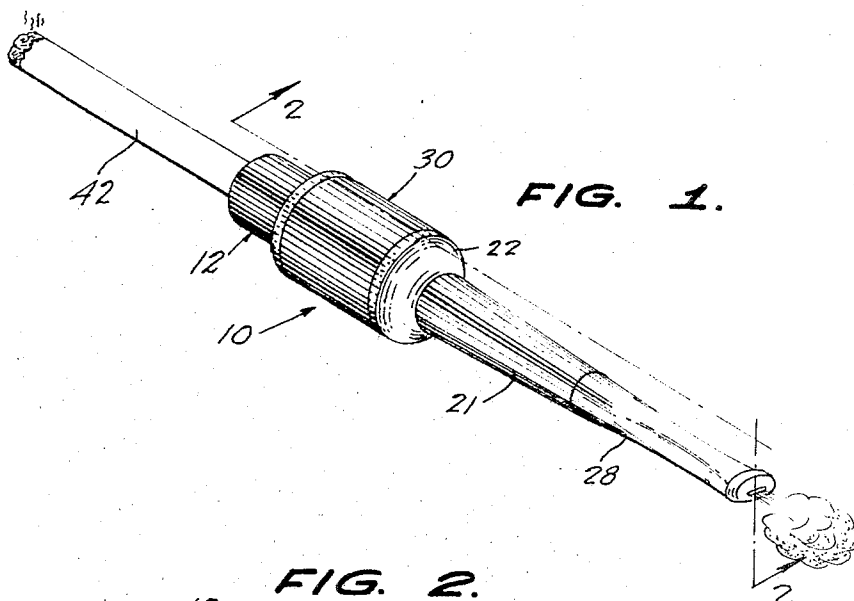
WENSAN WANG

3,313,309

WET FILTER-CONTAINING SMOKER'S APPLIANCE

Filed Sept. 25, 1964

2 Sheets-Sheet 1



INVENTOR.
WENSAN WANG,
BY

Berman, Davidson & Berman
ATTORNEYS.

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FIG. 6.

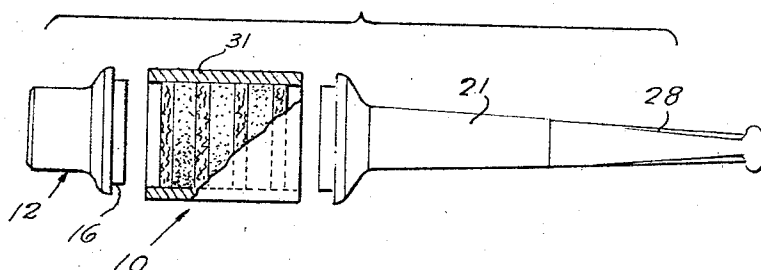


FIG. 7.

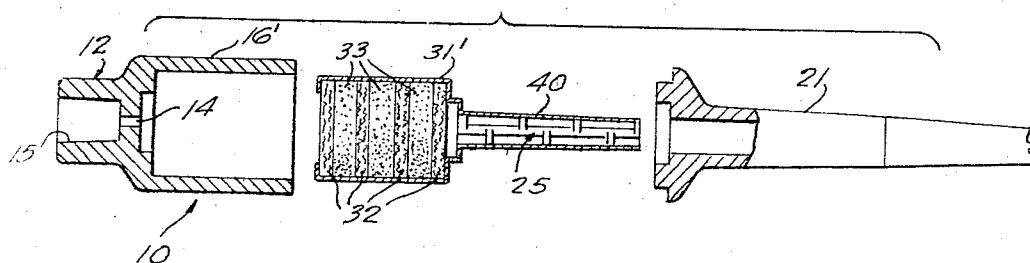
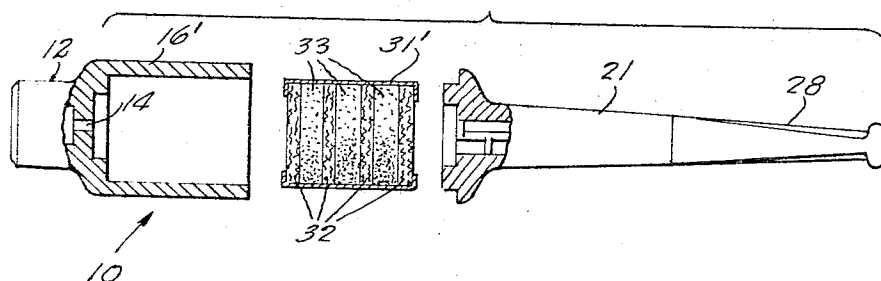


FIG. 8.



INVENTOR
WENSAN WANG,
BY

Berman, Davidson & Berman
ATTORNEYS.

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3,313,309

WET FILTER-CONTAINING SMOKER'S
APPLIANCEWensan Wang, 344 Seijo-machi, Setagaya-ku,
Tokyo, Japan

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This invention relates to a smoker's appliance for smoking cigarettes.

An object of the present invention is to provide a smoker's appliance which wet treats the smoke before reaching the mouth of the user.

Another object of the present invention is to provide a smoker's appliance which moistens and filters the smoke before reaching the mouth of the user, thereby tending to protect the cilia on the inner linings of the bronchial tubes of the user.

A further object of the present invention is to provide a smoker's appliance having as a part thereof a moistening and filtering unit which may be activated for use by a brief immersion in water of the tip end of the appliance.

A still further object of the present invention is to provide a smoker's appliance which is simple in construction, highly efficient in action, and commercially feasible.

Other objects and advantages of the present invention will become apparent from the following description taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of the smoker's appliance according to the present invention and having a cigarette mounted in the tip thereof and in the process of being smoked, and illustrating the cool moisture-laden smoke emitting from the mouthpiece of the appliance.

FIGURE 2 is a sectional view taken on the line 2-2 of FIGURE 1.

FIGURE 3 is an exploded sectional view of the smoker's appliance of FIGURE 1.

FIGURE 4 is an elevational view of the element for forming the tar trap of the smoker's appliance according to the present invention.

FIGURE 5 is an end view of the element of FIGURE 4.

FIGURES 6, 7 and 8 are exploded sectional views illustrating several forms of construction which the wet filter portion of the smoker's appliance may take.

Referring to the drawings, the numeral 10 designates generally the smoker's appliance according to the present invention, the appliance including a tip portion 12, a stem portion 20, and a body portion 30 interposed between and releasably secured to the tip and stem portions.

The tip portion 12, FIGURES 2, 3 and 6, comprises a cap 13 provided with an axial port 14, and a socket 15 projecting longitudinally from the outer face of the cap, the socket being in communication with the port 14. A shallow shell 16 projects longitudinally from the inner face of the cap 13, the shell being insert from the perimeter of the cap face so as to form a shoulder 17 extending thereabout. In the form of FIGURES 7 and 8, the shell 16' projects longitudinally from the perimeter of the inner face of the cap 13 and is of a greater length than the shallow shell 16 of the form of FIGURES 3 and 6.

The stem portion 20, FIGURES 2, 3 and 6, comprises an elongated open-end tubular holder 21 having a head 22 at one end, the holder tapering from the head 22 to the other end thereof. Projecting longitudinally from the face of the head 22 is a collar 23, the collar being inset from the perimeter of the face of the head so as to form a shoulder 24 extending thereabout. Disposed within the holder 21 is an element which, when fully inserted in the holder, forms with the wall of the holder a tortuous smoke

passage, and a well for the collection of tar, such element being designated by the numeral 25, FIGURES 4 and 5, and embodying an elongated narrow bar 26 provided with a plurality of short branches 27 projecting perpendicularly and in staggered relation from opposite sides of the bar 26. The element 25 is insertable into and withdrawable from the holder 21 through the one end carrying the head 22. A mouthpiece 28 is insertable into and withdrawable from the other end of the holder 21.

The body portion 30, FIGURES 2, 3, 6, 7 and 8, comprises a sleeve or tubular container such as 31 or 31' which houses a moistening and filtering unit, the unit comprising blocks, discs or similar planar members 32, fabricated from absorbent material selected from the group consisting of sponge rubber, sponge plastic, and filters 33 in the form of similar planar members disposed on one side of and abutting against an adjacent block, the filter being composed of a compressed mass of solid particles of filtering material selected from the group consisting of charcoal, silica gel. Specifically, as shown in the aforesaid figures, there are a plurality of blocks 32, four in number, with a filter 33 interposed between and engaged by adjacent blocks 32.

As illustrated in FIGURES 2, 3 and 6, the body portion 30 is disposed between the tip portion 12 and the stem portion 20 with the ends of the sleeve 31 embracing the shallow shell 16 and the collar 23 of the tip and stem portions 12 and 20 and seating against the shoulders 17 and 24 of the tip and stem portions.

In the form as illustrated in FIGURE 8, the sleeve 31' of the body portion 30 which houses the moistening and filtering unit has its ends turned inwardly against the adjacent blocks 32. The sleeve 31' is wholly received within the shell 16' of the tip portion 12 with the collar 23 of the stem portion 20 embracingly engaged by the inner end of the portion of the sleeve 31' adjacent the inner end thereof and the inner end of the sleeve 31' seating against the shoulder 24 of the stem portion 20.

In the form as illustrated in FIGURE 7, the assembly is the same as that of the above-described form of FIGURE 8, except that the end of the sleeve 31' which is adjacent the collar 23 of the stem portion 20 has a tapered hollow tube 40 projecting longitudinally therefrom, this tube housing the element 25 and forming with this tube the tortuous smoke passage and well for collection of nicotine and tar. This tube 40 is received within the holder 21 of the stem portion 20.

In operation, the user, upon desiring to employ the appliance for smoking a cigarette, immerses the tip portion 12 in a body of water for a brief interval of time, say, one to three minutes, whereupon the tip portion is removed from the body of water. This brief immersion charges the blocks 32 with absorbed water and wets the adjacent filters 33. A cigarette 42 is then placed so that an end portion is supported in the socket 15 of the tip portion 12, and the cigarette is lighted. As the cigarette is being smoked the smoke passes, in turn, through the blocks 32 and filters 33 and during this passage water vapor becomes admixed with the smoke, resulting in a reduction of temperature of the smoke, reduction of the harmful constituents from the smoke, the discharge of the treated cool smoke out of the mouthpiece 28 of the stem portion 23, and the separation of the tar which is collected in the provided well.

Research with the smoking of cigarettes appears to indicate that harmful constituents are present in the smoke issuing from a burning cigarette, and that such constituents may contribute to the induction of lung cancer. It is also thought that the resulting inactivation of cilia which are on the inner linings of the bronchial tubes may be an initial step toward inducing lung cancer. There-

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fore, by wet cooling the smoke the temperature is reduced to an extent to materially lower the formation of the harmful constituents.

What is claimed is:

1. In a filter cartridge for tobacco smoke, means forming a tubular chamber adapted to be located between a mouthpiece and a holder for burning tobacco, said chamber having axial inlet and outlet openings adapted to permit smoke to pass therethrough and a plurality of absorbent and adsorbent abutting planar members arranged in an alternate array, transversely of the longitudinal axis of said chamber, said chamber containing water whereby the absorbent members will hold some of the water and also maintain the adsorbent members in a wetted condition.

2. In a filter cartridge, the combination recited in claim 1 wherein said absorbent members are formed of a material selected from the group consisting of sponge rubber and sponge plastic.

3. In a filter cartridge, the combination recited in claim 1 wherein said adsorbent members are formed of a material selected from the group consisting of charcoal and silica gel.

4. In a filter cartridge, the combination recited in claim 1 wherein said absorbent members are formed of a material selected from the group consisting of sponge rubber and sponge plastic, and said adsorbent members are

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formed of a material selected from the group consisting of charcoal and silica gel.

5. In a filter cartridge, the combination recited in claim 1 wherein said plurality of abutting members include at least a pair of absorbent members spaced apart by an interposed adsorbent member formed of a compressed mass of solid particles.

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SAMUEL KOREN, *Primary Examiner*.

JOSEPH S. REICH, *Examiner*.