

May 10, 1966

YOW-JIUN HU

3,250,280

SMOKING APPARATUS

Filed March 3, 1964

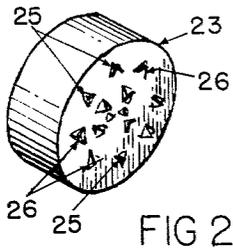
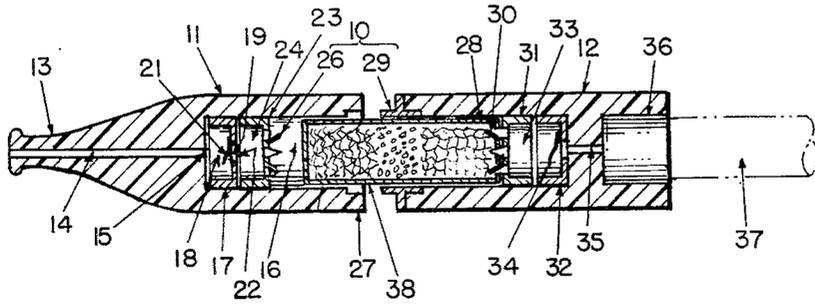


FIG 2

FIG 1

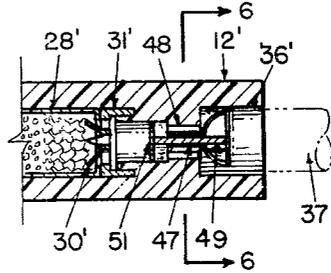


FIG 5

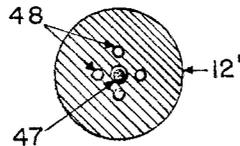


FIG 6

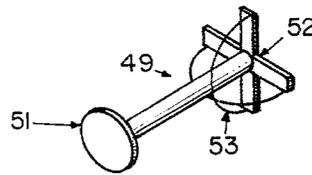


FIG 7

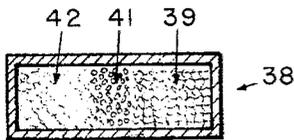


FIG 3

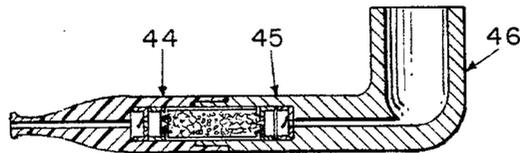


FIG 4

INVENTOR
YOW-JIUN HU
By *Jacob Frank*
ATTORNEY

1

3,250,280

SMOKING APPARATUS

Yow-Jiun Hu, 5831 Quantrell Ave., Alexandria, Va.

Filed Mar. 3, 1964, Ser. No. 349,116

4 Claims. (Cl. 131-173)

The present invention relates to smoking apparatus, and more particularly to articles and filters for utilization with tobacco members such as cigars, cigarettes and pipes, for conditioning the smoke therefrom.

With the advent of an increasing number of publicized authoritative reports relative to the adverse effects of tobacco smoking to the human health, many have become concerned with the development of the tobacco industry and recognize the need for a filter that will effectively remove tars, nicotine and other harmful elements in the smoke.

It has been known for many years that the most effective method of removing harmful elements from the smoke is by routing the smoke through a liquid solvent such as water for condensing and dissolving the harmful volatile elements, however, the many kinds of water pipes and wet filters in the market, although serving the purpose, have not proved entirely satisfactory under all conditions of service for the reason that considerable difficulty has been experienced in providing a simple, economical, light and moisture tight construction, which difficulties are overcome by the present invention.

The general purpose of this invention is to provide a novel smoker's article and smoke conditioning apparatus therefor. The smoke conditioning apparatus is provided with a container adapted to hold sufficient moisture in an absorbent material to remove a large percentage of the harmful elements from the smoke passing through, the moisture being sealed within the container until the commencement of the smoking process. Included within the container there may be a mean for conditioning or enriching the smoke which passes through with flavoring, so that one may smoke and enjoy his favorite taste simultaneously.

The smoker's article is novel as it is so designed that when a sealed container is placed therein, the article will open a passage, through at least opposite ends of the container, allowing smoke to pass through the article only by way of the container, and thence close-off the container from the surrounding atmosphere when the lighted tobacco is not being drawn on by the smoker.

An object of the present invention is the provision of a smoker's article for use with a liquid type filtering device.

Another object is to provide a new and novel smoke conditioning apparatus.

A further object of the invention is the provision of a new and novel smoke conditioning apparatus for flavoring smoke.

Other objects, advantages and capabilities of the present invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawings illustrating preferred embodiments of the invention.

In the drawings:

FIGURE 1 is a section through a cigarette holder and a filter container embodying the invention.

FIGURE 2 is a perspective view of a planar surface member shown in FIGURE 1.

FIGURE 3 is a sectional view of the smoke conditioning container.

FIGURE 4 is a sectional view of a pipe and a filter container embodying the present invention.

FIGURE 5 is a partial sectional view of a cigarette holder and an alternative embodiment of a valve to be employed in FIGURE 1.

2

FIGURE 6 is an enlarged cross-section taken along the line 6-6 in FIGURE 5.

FIGURE 7 is a perspective view of the valve shown in FIGURE 5.

Referring in detail to the drawings, there is shown in FIGURE 1 a cigarette holder 10 of generally tubular form and comprised of two main body members, each of which is formed from a suitable non-flammable material and preferably from a synthetic resin. The body member 11 has a mouthpiece 13 tapered at its rear end so that it may be easily grasped by the smoker's lips. Extending continuously with and inwardly from the mouthpiece 13 is a narrow passage 14 which has an inlet 15 into a large circular opening 16 defined by the inner surface of the body member 11. Within the circular opening 16 and adjacent to the inlet 15 there is frictionally fitted a planar surface member 17 defining a small enclosed space 18 adjacent to the inlet 15, the bottom of the planar surface member 17 having a center hole 19 covered by a hinged flap 21 which together structurally define a valve 22.

Adjacent to the planar surface member 17 there is also frictionally fitted into the circular opening 16 a further planar surface member 23 establishing a small enclosed space 24. The bottom portion of the planar surface member 23 has been penetrated a number of times to shape several holes 25 and sharp angular protruding members 26 which latter members extend into the main part of the circular opening 16. It is noted that the protruding members could have a hook or hollow needle configuration as will hereinafter become apparent to the reader. The inner circumference of the forward edge of body member 11 is stepped outwardly to shape a shoulder 27.

Body member 12 also has a large circular opening 28 and at its rear end and there is fixedly attached a bushing flange 29 adapted to frictionally engage the inner surface of shoulder 27. At the forward end of the circular opening are a pair of planar surface members 31 and 32 which are identical to and perform the same function as the planar surface members 23 and 17 respectively. The planar surface members 31 and 32 are frictionally inserted into the circular opening with their exposed ends facing each other to establish an enclosed space 33. Continuous with the valve 34 is a narrow passage 35 extending through the central portion of the body member 12 to its forward end, terminating at an aperture 36 which is adapted to have a cigarette 37 introduced therein.

Having engaged the forward end of body member 11 with the rear end of body member 12, circular openings 16 and 28 combined form a cylindrically shaped chamber to accommodate a filter container 38 through which virtually all the cigarette smoke will be routed prior to entering the smoker's mouth. Within the filter container is a filter material or materials such as fibrous material or charcoal granules partly moistened with a liquid such as water, alcohol or some other suitable chemically formed liquid to effectively reduce a vast percentage of the nicotine, tars, and other harmful elements in the smoke, as well as to cool the smoke. It is noted that the configuration of the filter container and the cigarette holder chamber must be compatible, however, practically any configuration may be utilized. A preferred embodiment of the filter container 38 is shown in FIGURE 3, comprising a cellular bundle 39 made of absorbent fibrous material moistened with some liquid, charcoal granules 41 and a dry cellular bundle 42 of fibrous material. The filter container 38 comprises an encasing which can be made of metal, plastic or any suitable vapor tight material. When the container 38 is filled with the filter materials and moistened within, it is then hermeti-

cally sealed. The filter container, due to its vapor tight and sealed construction, is capable of being used most any time since there is no fear that the liquid within will evaporate. In view of the latter, it is noted that the containers may be packaged in a simple and economical non-airtight holder. The ends of the filter container are made from a material which may be readily penetrated by the angled protruding members 26 shown in FIGURES 1 and 2.

Attention is called to the fact that flavoring of some type, such as peppermint, orange, vanilla or an alcohol substance like whisky, brandy or rum, may be substituted for or added to other elements within the container prior to the sealing process, to provide a tastier or enriched smoke. By employing the flavoring in the filter container of the present invention rather than in the tobacco itself, the flavoring will more effectively add to the taste of the smoke, as the lower temperature of the smoke as it is routed through the filter container is less likely to burn out the flavoring additive.

In operation, the filter container 38 is inserted into the circular openings 16 or 28 in one of the body members 11 or 12 respectively, then the remaining body member is engaged with the other, as shown in FIGURE 1, and each member is urged toward the other at which time the sharp angular protruding members 26 and 30 of the planar surface members 23 and 31 respectively, will puncture the opposite ends of the filter container 38 to form open passageways therethrough for smoke flow. The cigarette is then introduced into the aperture 36 in the forward end of body member 12 and lighted. As the smoker inhales to apply suction at the narrow passage 14 via the mouthpiece 13, valves 22 and 34 will open to allow smoke to be drawn from the cigarette 37 through the pierced holes in the filter container 38 to: first filter the tars, nicotine and other harmful elements by the liquid absorbent cellular bundle 39, then to further purify the smoke by use of the charcoal granules 41, and thereafter remove any excessive moisture in passing through the dry cellular bundle 42, thus providing a conditioned smoke. When suction is not applied at the narrow passage 14 of the mouthpiece 13, the valves 22 and 34 will be closed to seal off the filter container contents from the surrounding atmosphere thereby preventing evaporation of moisture from the same.

The above described invention may also be utilized in a pipe structure as shown in FIGURE 4, wherein there is disclosed a rear body member 44 and a forward body member 45 similar to and operating in the same manner as those illustrated in FIGURE 1, however the forward body member 45 in the present embodiment comprises a pipe bowl 46 in lieu of a cigarette holder.

In FIGURES 5-7, there is disclosed an alternative embodiment for the valve 34 shown in FIGURE 1. In FIGURE 5 there is shown a body member 12' having a rear circular opening 28' with a planar surface member 31' frictionally inserted therein and having sharp protruding angled members 30'. Forward of the planar surface member 31' is a portion of the body member 12' having a central hole 47 and, at equal distances therefrom, a number of passageways 48 extending through the body member 12' as shown more clearly in FIGURE 6. A valve stem 49 is located in the hole 47 which stem 49 has a valve 51 attached at one end and crossed members 52 attached at the other end in aperture 36'. Located

between the crossed members 52 and the body member 12' is a wire spring 53 to normally bias the valve 51 against the passageways 48 to seal off the same. In operation, when the cigarette 37' is introduced into the aperture 36', the spring 53 will be urged against body member 12' to thereby force valve 51 away from the passageways 48 to allow the smoke to be drawn through the cigarette holder.

It should be understood, of course, that the foregoing disclosure relates to only preferred embodiments of the invention and that numerous modifications and/or alterations may be made therein without departing from the spirit and the scope of the invention, it is desired therefore, that only such limitations be placed on the invention as are imposed by the prior art and set forth in the appended claims.

What is claimed is:

1. In a tobacco holder and filter cartridge combination, a holder assembly including interconnectable mouthpiece and tobacco holding sections, said sections when interconnected defining a cartridge chamber, a hermetically sealed filter cartridge insertable in said chamber, said filter cartridge formed of end walls of puncturable material and comprising a mixture of liquid absorbent material and a liquid substantially moistening said liquid absorbent material, said mouthpiece and said tobacco holding sections each including one of a pair of planar surface members traversing the chamber, the planar surface members each containing a plurality of struck out portions extending into said chamber for penetrating the end walls of a cartridge inserted therein when the mouthpiece and tobacco holding sections are interconnected, said cartridge and the punctured portions of said planar surface members providing a portion of a smoke passage, the whole passage extending axially of said holder, first valve means located in said passage at the mouthpiece section and second valve means located in said passage at the tobacco holding section, said first and second valve means allowing smoke to flow through said passage only when suction is applied at the mouthpiece.

2. In a tobacco holder and filter cartridge combination as set forth in claim 1, wherein said tobacco holding section comprises means for holding a cigarette.

3. In a tobacco holder and filter cartridge combination as set forth in claim 1, wherein said tobacco holding section comprises a pipe bowl.

4. In a tobacco holder and filter cartridge combination as set forth in claim 2, whereby means are provided to normally maintain the second valve in a closed position whereby the insertion of a cigarette in the tobacco holding means will contact the valve and cause the same to be placed in an open position.

References Cited by the Examiner

UNITED STATES PATENTS			
1,543,043	6/1925	Allen	131-172
1,734,756	11/1929	Alland	131-173
2,108,860	2/1938	Kauffman	131-10
2,911,984	11/1959	Gerard et al.	131-208
3,006,346	10/1961	Golding	131-10
3,125,100	3/1964	Jany	131-208

SAMUEL KOREN, *Primary Examiner.*

JOSEPH S. REICH, *Examiner.*