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3,702,118

CIGARETTE HOLDER WITH TAR-COLLECTING INSERT

Original Filed March 17, 1969

Fig. 1.

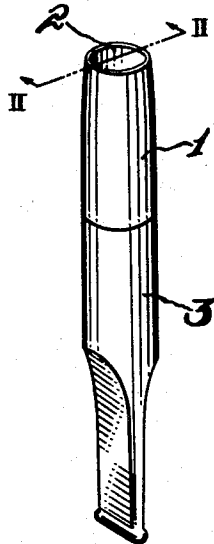


Fig. 2.

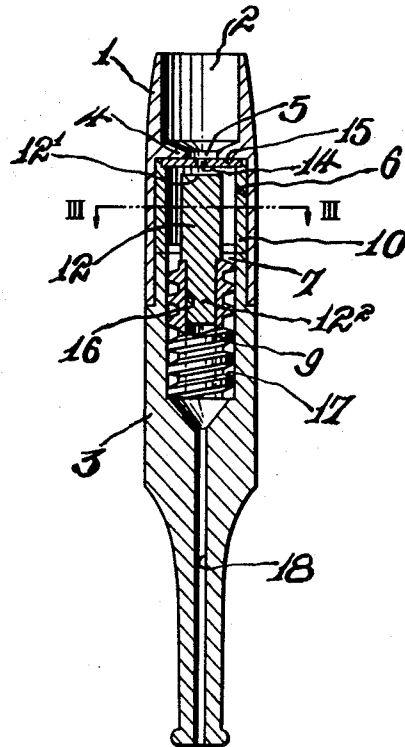


Fig. 4.

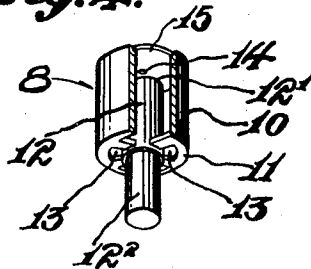


Fig. 3.

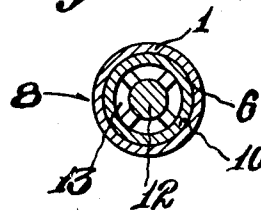
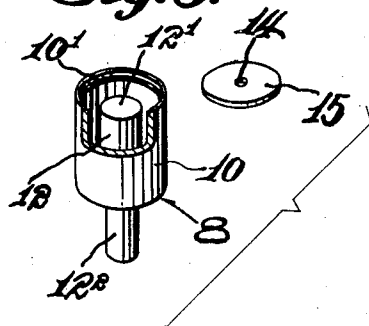


Fig. 5.



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1

3,702,118

CIGARETTE HOLDER WITH TAR-COLLECTING INSERT

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Continuation of application Ser. No. 807,628, Mar. 17, 1969. This application Sept. 8, 1970, Ser. No. 70,562

Int. Cl. A24f 1/16, 7/04

U.S. Cl. 131-209

6 Claims

ABSTRACT OF THE DISCLOSURE

A tar-collecting insert consisting of a first and a second insert member, said first insert member being inserted in the bore of the cigarette holding member and being formed with an open-topped and bottom-perforated walled cylindrical piece, a detachable cover having a central narrow through-hole and a flat-topped solid rod extending axially and centrally through said bottom wall, the upwardly extending portion of said rod leaving a narrow clearance between its flat top and the lower face of said cover, said flat top facing said central narrow hole of the cover, the downwardly extending portion being received in a bore in said second insert member which, in turn, is inserted in the bore of the mouthpiece member and is hollow and cylindrical and has a helical thread provided integrally around its external surface to provide a helical passageway with the inner wall of the mouthpiece member.

This application is a continuation of my application Ser. No. 807,628, filed Mar. 17, 1969, now abandoned.

BACKGROUND OF THE INVENTION

(a) Field of the invention

The present invention is concerned with a cigarette holder, and more particularly, it relates to a cigarette holder which permits the user to easily remove its tar-collecting insert and to easily clean it or to easily replace the same with a fresh one.

(b) Description of the prior art

Some of the known cigarette holders comprise cigarette holding members and mouthpiece sections. Said cigarette holding members comprise protrusions containing first straight smoke paths provided therein adjacent to the cigarette holding sockets, said first paths extending for a distance to terminate in the middle portion of the cigarette holding members. Near the closed end of this first smoke path, there are formed transverse narrow passageways to distribute the smoke stream sideways to lead the spread smoke streams to the adjacent area in which the smoke streams pass while being partially trapped by bulging formations provided on the external wall of the rear half of the protrusions. Here, a great difficulty is encountered in cleaning the narrow passageways in which tar is accumulated.

SUMMARY OF THE INVENTION

It is, therefore, the object of the present invention to eliminate the aforesaid difficulties which are encountered in the cigarette holders of the prior art when it was intended to remove the tar accumulated on the surface of an insert, and to provide an improved cigarette holder which enables the user to easily remove the tar accumulated on the surface of the insert which consists of two independent tar-collecting insert members housed, as a combined insert, within the cigarette holder.

2

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the cigarette holder embodying the present invention;

FIG. 2 is a longitudinal sectional view, in an enlarged scale taken along the line II—II in FIG. 1;

FIG. 3 is a cross sectional view taken along the line III—III in FIG. 2;

FIG. 4 is a perspective view, partly broken away, of the first tar-collecting insert member; and

FIG. 5 is another perspective view, partly broken away, of said first tar-collecting member, wherein the cover having a central narrow through-hole is shown detached from the cylindrical piece to which said cover is to be mounted.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawing, reference numeral 1 represents a cigarette holding member having a recess 2 formed in the upper end portion having an open top end for allowing the insertion of a base portion of a cigarette to be held therein. Numeral 3 represents a mouthpiece member which is adapted to be detachably fitted in the central bore 6 which is so formed in the lower portion of the cigarette holding member 1 as to extend downwardly from the peripheral edge of the bottom wall 4 of said recess 2. This bottom wall 4 of the recess 2 substantially separates the recess portion 2 of the cigarette holding member 1 from said bore portion 6 provided in the lower section of the cigarette holding member 1. This bottom wall 4 is provided with a through-hole 5 formed centrally therethrough to communicate with the bore 6. Said bottom wall 4 may be tapered on the face on the side adjacent to said recess 2 so as to guide the smoke emitted from the cigarette to said central through-hole 5. A first tar-collecting insert member which is indicated generally at 8 and which will be described in detail later is fitted in the bore 6 of said cigarette holding member 1, and a second-tar-collecting insert member 9 is fitted in the bore 7 of the mouthpiece member 3 which will be described later also. Said first tar-collecting insert member 8, in this embodiment, is made as an integral body, from an appropriate rigid and tough and incombustible material such as a hard synthetic resin or metal. Said first tar-collecting insert member 8 is molded or cast into an article consisting of a hollow cylindrical piece 10 having a configuration and size suitable for being detachably fitted in the bore 6 in slidable close contact with the inner wall of said bore 6, and having a perforated bottom wall 11 and also having a solid rod 12 extending through the central portion of said bottom wall longitudinally thereof. The portion of said rod extending upwardly in the cylindrical piece 10 has a flat top face 12¹. Said bottom wall 11 is provided with a plurality of perforations as at 13 which are scattered around said central rod 12. The cylindrical piece 10 is provided, around the inner peripheral edge of the open top end thereof, with a shouldered portion 10¹. A round cover 15 which is made with the same material as that of the cylindrical piece 10 and which has a narrow central through-hole 14 and which has a size allowing the cover to be fitted snugly onto the shouldered portion 10¹ and a thickness corresponding to the depth of the shouldered portion so that the plane of the upper face of the cover 15—when placed on said shouldered portion 10¹—is substantially aligned with the edge of the upper opening of the cylindrical piece 10. Said solid rod 12 extends upwardly from the bottom wall 11 of the cylindrical piece 10 for a distance such that there is left a narrow clearance between the flat top face 12¹ of the rod 12 and the bottom face of said cover 15, thus the rod facing the narrow through-hole 14 of said cover 15. The lower portion

3

12² of the solid central rod 12 extending beyond the lower face of the bottom wall 11 of the cylindrical piece 10 is so shaped that a step is formed around the circumference thereof for a short distance below said lower face of the bottom wall 11 of the cylindrical piece 10 in such a way that the portion of the rod located above said stepped portion has a diameter which is the same as the diameter of the portion of the rod extending upwardly in the cylindrical piece 10 and further that the portion of the rod extending downwardly from said step has a diameter smaller than that of the portion located above said step as best seen in FIG. 2.

The second tar-collecting insert member 9 may be made with the same material as that of the first tar-collecting member 8 or from a metal or a non-inflammable hard synthetic resin. This second tar-collecting insert member 9 is of tubular shape having a longitudinally extending central bore 16 having an inner diameter corresponding to that of the lower portion of the rod having a smaller diameter so as to snugly and detachably receive said lower end portion 12² of the rod 12. This tubular second tar-collecting insert member 9 is provided, around the external circumference thereof, with a helical thread of many turns. The external edges of the thread are of a diameter such that they are slidable along the inner wall of the bore 7 and in close engagement therewith of the mouthpiece member 3 to form therewith a helical passageway 17 of many turns. This second tar-collecting insert member 9 is received in the central bore 7 of the mouthpiece member 3. Said mouthpiece member 3 has a longitudinal central channel 18 formed downwardly through the central longitudinal axis thereof in such a way that the uppermost end of said channel 18 communicates with the lower end of the bore 7.

After the respective parts of the cigarette holder have been assembled together in the manner as shown in FIG. 2, a cigarette is inserted in the recess 2 of the cigarette holding member 1 of the cigarette holder. The lower end portion of the mouthpiece member is held in the smoker's mouth while lighting the free end of the cigarette. Then, suction is applied to the other end of the cigarette by the mouth of the smoker through the channel 18 of the mouthpiece member 3. Whereupon, the smoke emitted from the cigarette will pass through the central through-hole 5 formed in the bottom wall of said cigarette receiving recess 2 while being guided by the tapered face thereof, and then through the narrow central through-hole 14 of the cover 15, and will travel through the clearance formed between the lower face of the cover 15 and the top flat face of the solid rod 12 to impinge against the flat top face of the latter. Wherefrom, the current of the smoke is directed, due to the suction, radially and passes through the space in the cylindrical piece 10 around the external circumference of the solid rod 12 and flows through the perforations 13 formed through the bottom wall 11 of the cylindrical piece 10. Thence, the divided currents of smoke which have entered into the space in the bore 7 of the mouthpiece member 3 are united. The resulting current of smoke which is drawn by suction is caused to proceed through the helical passageway 17 which is formed between the inner wall of the bore 7 and the external wall and thread of the second tar-collecting insert member 9. Therefrom, the current of smoke is sucked into the central channel 18 and is discharged into the mouth of the smoker from the terminal open end of this channel 18. During the passage of the smoke, it passes quickly through the hole 14 which is formed in the cover 15 which rests on top of the cylindrical piece 10 of the first tar-collecting insert member 8 and impinges against the flat top face 12¹ of the solid central rod 12, altering its direction of travel radially. During this period, the majority of the tar contained in the smoke is separated therefrom to deposit on the rear or the lower face of the cover 15 and also on the flat top face 12¹ of the solid central rod 12. The smoke which has been removed of the

4

majority portion of tar therefrom during the foregoing travel proceeds further through the perforations 13 which are formed in the bottom wall 11 of the cylindrical piece 10. During the passage of smoke through said perforations, some of the tar is separated to adhere to the edges of these perforations 13. As the smoke proceeds therefrom through the many turns of the long helical passageway 17, most of the remaining tar contained in the smoke is separated and deposits on the faces of this passageway 17. Thus, the smoker will either puff or inhale the resulting smoke which has been already stripped of most of the harmful tar contained in the smoke initially emitted from the burning cigarette and sucked through the cigarette holder.

I claim:

1. A cigarette holder comprising a hollow cigarette holding member mounted on a hollow mouthpiece member, these two members having central bores, respectively, communicating with each other, a tar-collecting insert consisting of a first member and a second member, said first tar-collecting insert member being received in the central bore of said cigarette holding member and being formed with an open top cylindrical piece, a cover provided with a narrow central through-hole and received in said open top of said cylindrical piece and a solid central rod fixed to a perforated bottom wall of said cylindrical piece and extending upwardly from the center of said bottom wall to be spaced from but adjacent to said narrow central through-hole in said cover, said rod extending downwardly also from the center of said bottom wall toward said second insert member, said second insert member being received in the central bore of said mouthpiece member and being provided with a central bore in which said downwardly extending portion of said rod is received, said second insert member being provided with a helical thread therearound so that a helical passageway is formed between the thread and the inner circumferential wall of the bore of said mouthpiece.

2. A cigarette holder according to claim 1 wherein said solid central rod having an upper portion and a lower portion, said upper portion having a diameter greater than that of the lower portion, said upper portion extending for a short distance beyond and below the bottom wall of said cylindrical piece.

3. In a cigarette holder having a hollow mouthpiece member and a hollow cigarette holder member detachably mounted on said mouthpiece member, said mouthpiece member and said cigarette holder member having bores communicating with each other, the improvement comprising:

first tar collecting means mounted between and communicating with both of said bores, said first tar collecting means being separable from said bores and including means defining a tar collecting chamber therein, said first tar collecting means having a side and a top wall closing one end of said chamber and facing said bore in said cigarette holder member, said top wall having restricting orifice means therethrough to permit the passage of smoke from said holder member into said first tar collecting means, said first tar collecting means further including an imperforate barrier surface disposed in confronting, closely spaced relation to said restricting orifice means to thereby define a gap therebetween, whereby substantially all of the smoke which passes through said restriction orifice means will flow axially and impinge against said surface, said imperforate barrier surface being radially inwardly spaced from the side wall of the chamber so that the smoke will then flow along said surface and into the chamber in the zone around said surface when suction is applied at the bottom end of the mouthpiece at the bore therein;

second tar collecting means located between said first tar collecting means and said mouthpiece member,

5

said second tar collecting means including means defining a helical chamber for providing communication between said first tar collecting means and said mouthpiece member; and

an elongated second rod extending downwardly and beyond the bottom of said first tar collecting means, said second tar collecting means including means defining a recess therein, said second rod being received in said recess means.

4. A cigarette holder according to claim 3, wherein said first tar collecting means is an elongated hollow member having an open top, a side wall and an open bottom wall, said top wall extending across and closing said open top.

5. A cigarette holder according to claim 4, wherein said barrier surface is defined by the axial end of a second elongated rod which extends axially through said hollow member to a location close to said top wall, said axial end of said second rod being of greater diameter than said restricting orifice means.

6. A cigarette holder according to claim 5, wherein said first tar collecting means is a hollow cylinder; and wherein said second elongated rod is cylindrical, the axis of said second rod being coaxial with the axis of said first tar collecting means and said restriction orifice means;

6

whereby said smoke will pass through said restricting orifice means, impinge upon said surface and move radially over said surface into said tar collecting means.

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JOSEPH S. REICH, Primary Examiner

U.S. Cl. X.R.

131—261

25

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3 702 118

Dated November 7, 1972

Inventor(s) Katuhisa Terasaki

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 1, between lines 8 and 9, there is added ---Claims priority application Japan, March 23, 1968, Serial No. 43/22729.---

Col. 5, line 5; cancel "second".

Col. 5, line 8; cancel "second".

Col. 5, line 9; cancel "means".

Col. 5, line 14 cancel "a second elongated" and replace by
and 15; ---said---

Col. 5, line 17; cancel "second".

Col. 5, line 21; cancel "second".

Col. 5, line 22; cancel "second".

Signed and sealed this 8th day of May 1973.

(SEAL)

Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents