

May 20, 1952

A. NOHR

2,597,124

TOBACCO SMOKING DEVICE

Filed April 12, 1946

2 SHEETS—SHEET 1

FIG. 1

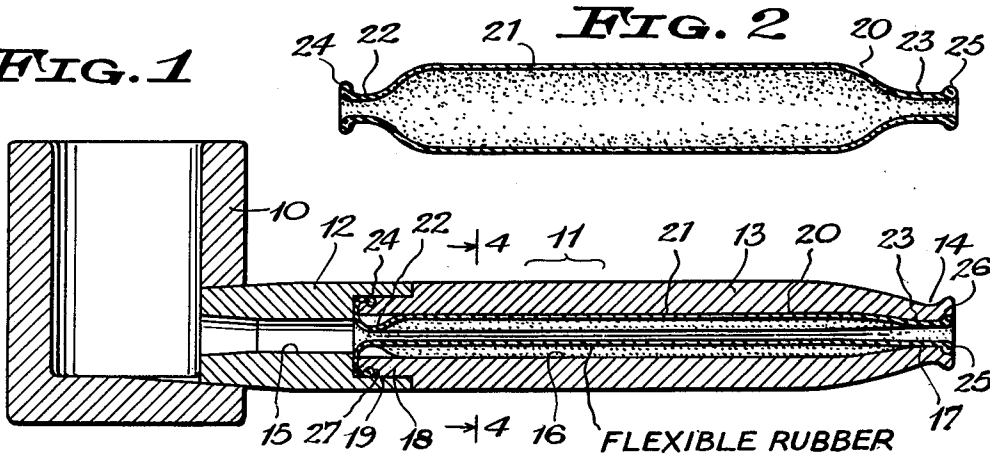


FIG. 2

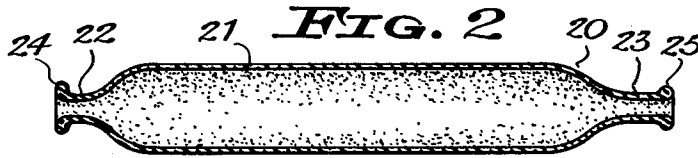


FIG. 4

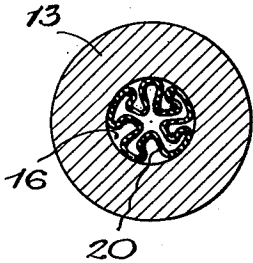


FIG. 5

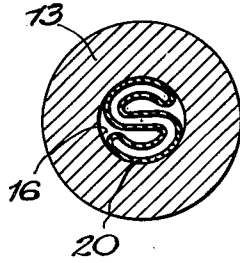


FIG. 3

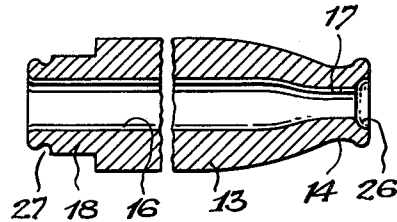


FIG. 6

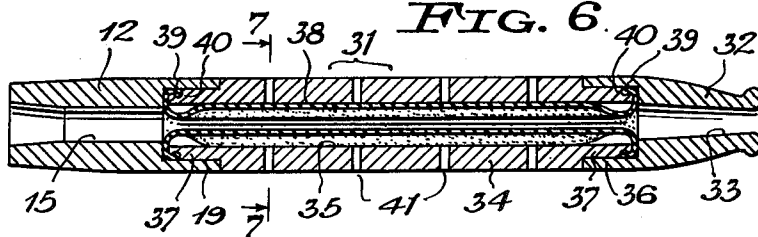


FIG. 7

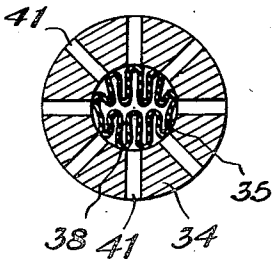
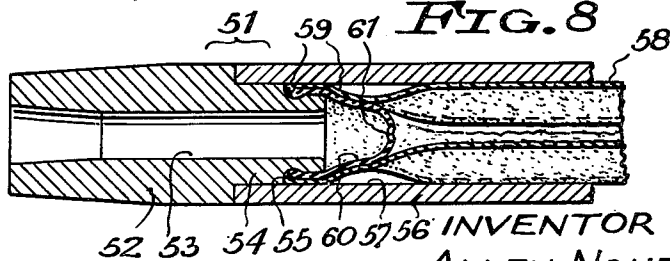


FIG. 8



INVENTOR
ALLEN NOHR
BY Christopher L. Neal
ATTORNEY

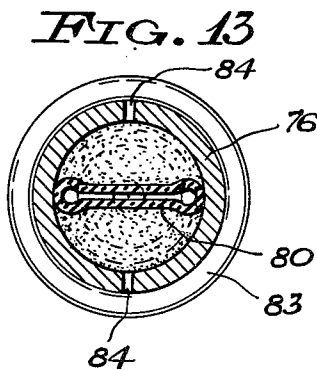
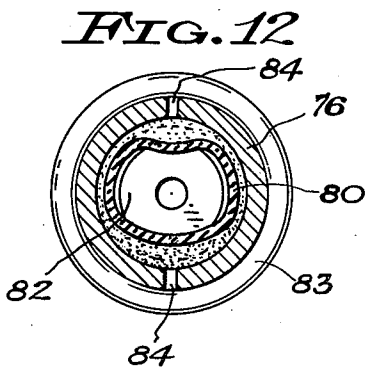
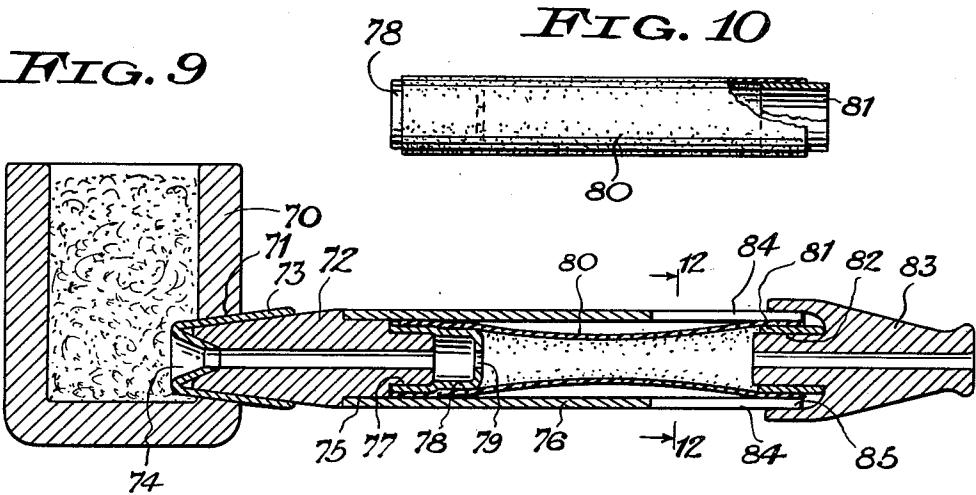
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TOBACCO SMOKING DEVICE

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2 SHEETS—SHEET 2



INVENTOR
ALLEN NOHR
By *Christopher L. Neal*
ATTORNEY

UNITED STATES PATENT OFFICE

2,597,124

TOBACCO SMOKING DEVICE

Allen Nohr, Milwaukee, Wis.

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6 Claims. (Cl. 131-290)

1

The present invention relates to tobacco smoking devices, such as pipes, cigarette holders and the like.

An object of the invention is to provide an improved smoking device having a smoke chamber with thin flexible walls arranged to permit expansion and contraction of the chamber during smoking, the chamber also forming a smoke reservoir.

Another object is to provide a smoking device in which the smoke chamber forms a conduit through which smoke passes and in which the thin flexible walls are so arranged as to present an extended smoke-contacting surface for cooling the smoke and for trapping liquid particles and dust.

Still another object is to provide a smoking device in which the flexible walls of the smoke chamber are formed of thin, smoke-impervious material, such as rubber.

A further object is to provide a simple and inexpensive flexible member readily applicable to a pipe or the like to form the thin flexible walls of a smoke chamber.

The invention further consists in the several features hereinafter described and claimed.

In the accompanying drawings, illustrating certain embodiments of the invention,

Fig. 1 is a longitudinal sectional vertical view of a tobacco smoking pipe constructed in accordance with the invention;

Fig. 2 is a longitudinal sectional view of a flexible tubular member adapted for insertion in the pipe stem;

Fig. 3 is a detail longitudinal sectional view of a pipe stem member broken away;

Fig. 4 is a transverse sectional view taken on the line 4-4 of Fig. 1;

Fig. 5 is a view similar to Fig. 4 but showing a modified way of folding the tubular member in the stem;

Fig. 6 is a longitudinal sectional view of a modified pipe stem, the stem being also adapted to form a cigarette holder;

Fig. 7 is a transverse sectional view taken on the line 7-7 of Fig. 6;

Fig. 8 is a longitudinal sectional view of another modified form of smoking device;

Fig. 9 is a longitudinal sectional vertical view of a modified form of pipe;

Fig. 10 is a detail view of a flexible tubular smoke-conducting member for the pipe, parts being shown in section;

Fig. 11 is a side view of a pipe barrel;

2

Fig. 12 is a transverse sectional view taken on the line 12-12 of Fig. 9, and

Fig. 13 is a view similar to Fig. 12, but showing the flexible tube collapsed by the application of suction.

Referring to Figs. 1 to 5 of the drawings, 10 designates a pipe bowl adapted to receive a charge of tobacco to be smoked, and 11 designates a tubular stem detachably secured to the bowl. The stem comprises separable sections 12 and 13, the former having a frictional fit in the bowl, and the latter having a mouthpiece portion or bit 14. The stem sections 12 and 13 have respective axial bores 15 and 16 therethrough, the latter bore, if desired, having a reduced portion 17 at the bit. The stem sections are separably connected, as by providing the section 13 with a reduced front end or nipple 18 frictionally fitting in a counterbore 19 formed in the rear end of the section 12. In some instances, the section 12 may be made integral with the bowl. The bowl and stem may be formed of any usual materials, such as wood and hardened plastics.

Extending longitudinally in the bore 16 of the stem section 13 is a tube 20 with thin, limp, flexible walls, like those of a toy balloon, the tube formed of thin rubber or rubber-like material. In some instances, the tube may be formed of certain other materials such as cellophane. Before its insertion, the flexible tube has the appearance shown in Fig. 2, and comprises an intermediate portion 21 and reduced end portions 22 and 23. The intermediate portion 21 is considerably larger in diameter than the stem bore 16, and the reduced end portions 22 and 23 preferably have respective terminal beads 24 and 25. If desired, the reduced end portions of the tube may have thicker walls than the intermediate portion, as shown in Fig. 2. The flexible tube 20 is inserted into the stem bore 16 from the large end thereof, the tube being folded or wrinkled in any suitable configuration, such as that shown in Fig. 4 or Fig. 5, to pass into the bore. The reduced rear end 23 of the tube is passed through the reduced rear portion 17 of the stem bore, and the end bead 25 of the tube expands to confine or lock the beaded end in the stem. Preferably, although not necessarily, the stem has an annular rabbet or chamfer 26 at its rear end to receive the expanded bead. The front end 22 of the tube is stretched slightly and folded back over the reduced front end portion 18 of the stem section 13, the bead 24 fitting in an annular groove 27 formed about the stem portion 18. The

3

stem portion 18 is then pressed into the front stem section 12, and the pipe is ready for use.

When the pipe is in use, suction applied to the stem by the smoker will draw smoke through the flexible tube 20, causing transverse contraction or collapse of the folded or wrinkled portion of the tube by differential pressure and somewhat constricting the smoke passage but not enough to cause hard drawing. The air pressure in the space between the tube and the stem collapses the tube when suction is applied to the tube by the smoker. In its travel the smoke contacts the extended inner surface of the flexible tube, thus cooling the smoke and also providing a filtering or cleaning action on the smoke, liquid particles and dust being deposited on the tube walls. Upon release of suction the flexible tube expands by reason of its resiliency, drawing in smoke from the bowl and in effect prolonging the suction action. The flexible tube forms a smoke reservoir in which the smoke is cooled and from which smoke is drawn at the next application of suction by the user. The pipe thus draws easily, and because of the expansion and contraction of the tube the lighted tobacco burns smoothly and is not likely to be prematurely extinguished. The cooling of the flexible tube occurs not only by radiation from the relatively large surface area of the tube and by contact with the stem section 13, but also by air which is admitted into the expansible tube from the mouthpiece.

The flexible tube 20 can be easily removed for cleaning, and the large diameter passages in the pipe stem also facilitate cleaning. Since the flexible tube is relatively inexpensive it is feasible to provide a new tube instead of cleaning the old one.

The invention may also be incorporated in cigarette holders and cigar holders. If desired, the pipe stem of Fig. 1 may be used as a cigarette holder.

The modified form of pipe stem (or cigarette holder) 31 shown in Figs. 6 and 7 comprises a front end section 12 with an axial bore 15, a mouthpiece section 32 with an axial bore 33, and an intermediate section or barrel 34 with an axial bore 35. The barrel is detachably secured to the end sections, as by frictional fits, the end sections having respective counterbores 19 and 36 to receive reduced opposite end portions 37 of the intermediate section. A flexible tube 38, generally similar to the tube 20 of Fig. 2, is disposed in the barrel 34 and has reduced beaded ends 39 folded back over the reduced ends of the barrel, these reduced ends having annular grooves 40 to receive the beads. In some instances the intermediate section or barrel 34 is provided with a plurality of radial ventilating openings 41 to improve cooling and to facilitate expansion and contraction of the flexible tube. If desired, the pipe stem section 13 of Fig. 1 may be similarly apertured. The barrel may be formed of various materials, such as wood, metal and hardened plastics.

The device of Fig. 6 is similar in use to the device of Fig. 1, the flexible tube 38 expanding and contracting during smoking, and forming a trap for liquid particles and dust.

The modified form of pipe stem (or cigarette holder) 51 shown in Fig. 8 includes a front end section 52 having an axial bore 53 and a reduced rear portion 54, here shown to have an annular groove 55. The stem further includes another tubular section 56 with an axial bore 57, the front end of the section 56 frictionally fitting

4

over the reduced end 54 of the front section 52. The section 56 may be otherwise similar in construction to the stem section 13 of Fig. 1, or it may be an intermediate member or barrel similar to the barrel 34 of Fig. 6.

A thin-walled flexible tube 58, similar to the tube 20 of Fig. 2, or the tube 38 of Fig. 6, is disposed in the stem section 56 and has a reduced beaded end 59 stretched over the reduced rear end of the front stem section 52. The rear end of the flexible tube may be secured in a similar manner, or it may be secured in the manner shown in Fig. 1. The smoke passage in the flexible tube consists largely of slit-like portions formed by the folds of the tube.

Also secured to the rear end of the front stem section is a flexible rubber nipple or cup 60 having a small rear opening 61. The nipple is disposed in the front end of the flexible tube and serves to trap any coarse particles or gummy material passing out of the front stem section 52.

The device of Fig. 8 is similar in use to that of the device of Fig. 1 or Fig. 6, the cup or nipple 60 providing an added filtering action.

The modified form of pipe shown in Figs. 9 to 13 comprises a tobacco-receiving bowl 70 having a tapered side outlet 71. A tubular stem section 72, such as of wood, has a conical metal end ferrule 73 frictionally fitting in the bowl outlet 71, the ferrule having a reversely turned conical portion 74 which provides a flaring opening for the tubular stem section. By this construction, burning of the stem section is avoided, and the conical end of the ferrule prevents blocking of the stem opening when tobacco is pressed into the bowl. The stem section 72 has a reduced cylindrical intermediate portion 75 on which frictionally fits the front end of a generally cylindrical barrel 76 of metal or hardened plastic. The stem section has a reduced cylindrical end portion 77 smaller in diameter than the intermediate portion 75 and adapted to frictionally receive thereover a rigid nipple or cup 78 having a small rear opening 79. This cup serves to trap any solid or gummy material passing out of the stem section 72 and also serves as a sleeve to frictionally hold thereon the front end of a thin-walled, limp, flexible tube 80, such as of rubber, extending longitudinally within the barrel 76. The rear end of the tube frictionally fits over a cylindrical sleeve 81, such as of metal or hardened plastic, which frictionally fits over the reduced cylindrical front end portion 82 of a tubular mouthpiece 83. The rear portion of the barrel is made resilient as by forming longitudinal slots 84 therein, and frictionally fits in an annular groove or channel 85 formed in the mouthpiece concentrically of the reduced end portion 82.

In assembling the pipe, the ends of the flexible tube 80 are applied to the cup 78 and sleeve 81, and the cup is then pressed over the end portion 77 of the stem section 72. The barrel 76 is then passed over the tube and is pressed onto the stem section 72, the intermediate portion of the tube being loose or slack in the barrel. The split rear end of the barrel is then compressed by the fingers to hold the sleeved rear end of the tube, and the mouthpiece is pressed into the sleeve 81, the split end of the barrel frictionally fitting in the groove 85 to retain the sleeve in its compressed condition.

When the pipe is in use the application of suction will cause collapse or deflation of the

5

thin-walled flexible tube, as to the folded condition shown in Fig. 13, leaving a restricted or slit-like smoke passage. A sufficient suction will bring the opposed tube walls together, leaving constricted smoke passages at the folds. The space about the outer side of the tube communicates with the atmosphere by way of the barrel slots 84. During smoking the reservoir-forming flexible tube 80 contracts and expands, thus providing a steadying or ballasting action and also cooling the smoke. The extended inner surface of the flexible tube also affords a filtering action. The pipe is readily disassembled for cleaning, and any gummy material collecting on the inner walls of the flexible tube can be easily washed off. The cup 78 is also readily detached and cleaned.

The flexible tube 80 is here shown to be formed of cylindrical stock but if desired it may have an enlarged intermediate portion, such as the tube of Fig. 2, in which event the enlarged portion will be folded or wrinkled as exemplified in Figs. 4, 5, and 7.

What I claim as new and desire to secure by Letters Patent is:

1. In a tobacco smoking device, a hollow barrel member, and a tube of thin, limp, flexible smoke-imperious material extending longitudinally in said member, said barrel member having apertured walls exposing the exterior surface of said tube to the atmosphere, said tube forming a smoke conduit and being contractible transversely under the influence of smoking suction to constrict the conduit, said tube when transversely contracted presenting longitudinal folds forming narrow smoke passages.

2. In a tobacco smoking device, a hollow barrel member, and a tube of thin, limp, resilient rubber-like material extending longitudinally in said member, said barrel member having apertured walls exposing the exterior surface of said tube to the atmosphere, said tube forming a smoke conduit and reservoir and being expandible and contractible during the smoking operation, and said tube when contracted under the influence of smoking suction constricting the conduit and presenting longitudinal folds.

3. In a tobacco smoking device, a hollow barrel member, a tube of thin, limp, flexible rubber-like material extending longitudinally in said member, said tube forming a smoke conduit and reservoir and being expandible and deflatable during the smoking operation, said barrel member having walls with openings exposing the outer side of said tube to the atmosphere, said tube when deflated having longitudinally extending folds forming narrow, constricted smoke passages.

4. In a tobacco smoking device, a tubular stem

6

comprising a barrel member, and an inflatable and deflatable tube of thin, limp, flexible rubber-like material extending longitudinally in said barrel member and forming a smoke conduit, said tube having ends engaging the ends of said barrel member, said barrel member having apertured walls to expose the exterior surface of said tube to the atmosphere, and said tube being transversely contractible under the influence of smoking suction to constrict the conduit, said tube when transversely contracted having longitudinally extending folds forming narrow smoke passages.

5. In a tobacco smoking device, a stem section, a mouthpiece, a barrel member connecting said stem section and mouthpiece, and a transversely contractible tube of thin, limp, flexible rubber-like material extending in said barrel member and forming a smoke conduit, said barrel member having apertured walls exposing the exterior surface of said tube to the atmosphere, and said tube being deflatable under smoking suction and when deflated presenting longitudinal folds forming constricted smoke passages.

6. In a tobacco smoking device, a stem section, a mouthpiece, a barrel member connecting said stem section and mouthpiece, a transversely contractible tube of thin, limp, flexible material extending in said barrel member and forming a smoke conduit, and a supporting sleeve within an end of said tube engageable with the mouthpiece, said barrel having a resilient compressible end portion for gripping the sleeved end of said tube to hold said sleeved end on the mouthpiece.

ALLEN NOHR.

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