

Feb. 4, 1941.

O. TURINSKY

2,230,872

SMOKING PIPE

Filed May 10, 1939

2 Sheets-Sheet 1

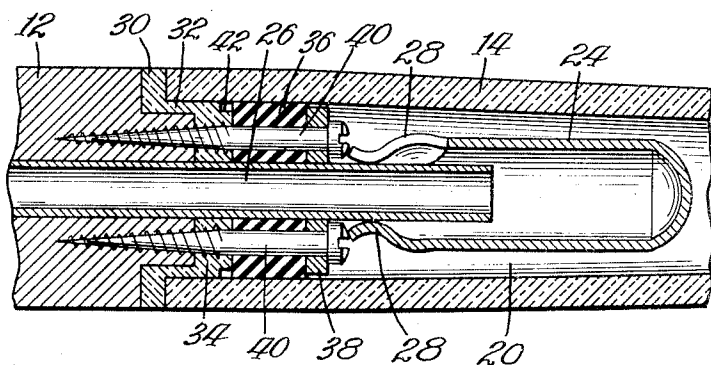
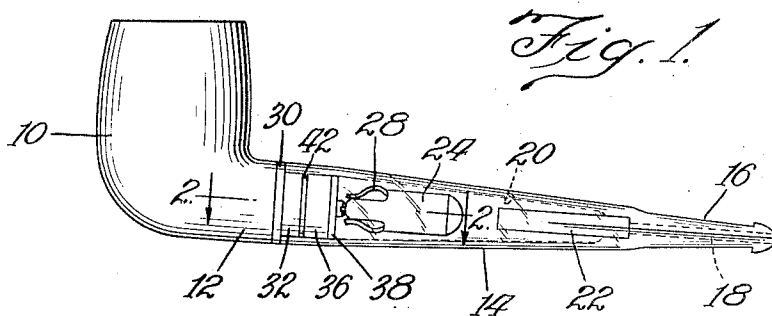


Fig. 2.

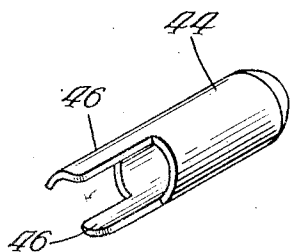
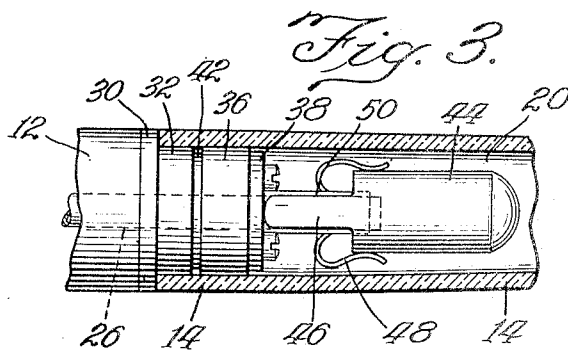


Fig. 4.



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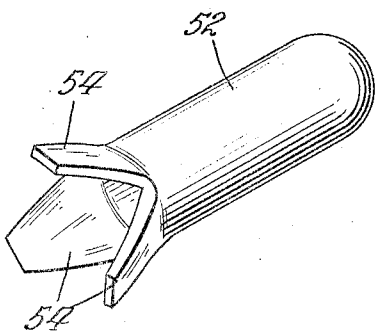
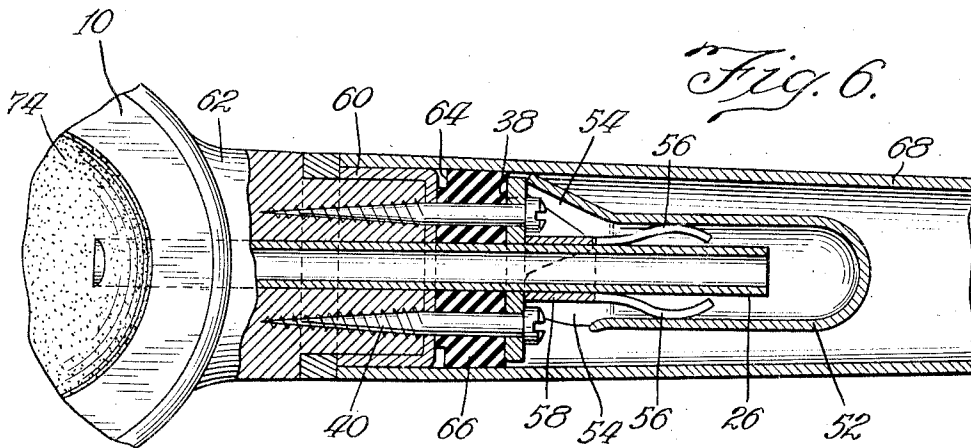
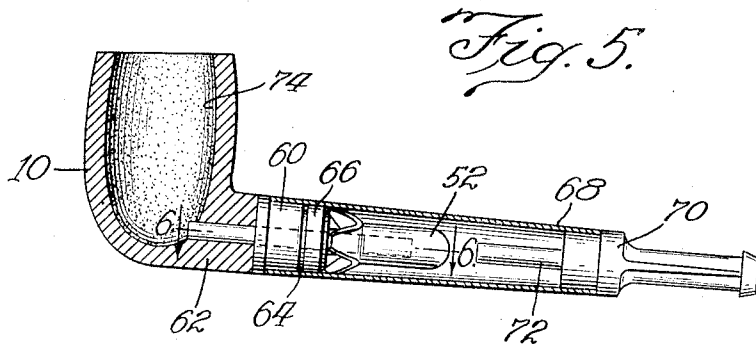
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SMOKING PIPE

Filed May 10, 1939

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,230,872

SMOKING PIPE

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Application May 10, 1939, Serial No. 272,836

18 Claims. (Cl. 131—212)

My invention relates to pipe smoking, and includes among its objects and advantages the provision of cooling and condensing means that are adequate for the purpose and at the same time sufficiently simple both in configuration and operation to obviate the objections of users to the complicated manipulations required in the use of devices of the prior art intended for generally similar purposes.

10 In the accompanying drawings:

Figure 1 is a side view of an illustrative embodiment of the invention;

Figure 2 is a section on line 2—2 of Figure 1;

15 Figure 3 is a fragmentary section on the same line as Figure 2 with some of the parts in elevation and with a modified baffle and holder;

Figure 4 is a perspective of the baffle of Figure 3;

20 Figure 5 is a vertical section of another modified construction;

Figure 6 is a fragmentary section as on line 6—6 of Figure 5; and

Figure 7 is a perspective view of the baffle of Figures 5 and 6.

25 In the embodiment of the invention selected for illustration in Figures 1 and 2, the pipe comprises the usual bowl 10 illustrated as of wood and having a shank 12 to receive the stem 14. The stem 14 illustrated is of substantially transparent plastic material. Such material is available in various colors and shades of which water-white and light amber are very satisfactory. However, for those who prefer not to have the parts inside the stem visible, it is a simple matter

30 to have the stem opaque. I have selected a transparent stem for illustration to facilitate showing the parts inside the stem.

The stem terminates in the usual bit 16 containing the usual smoke outlet 18. The smoke outlet 18 debouches at its inner end into the enlarged chamber 20. At the bit end of the chamber I provide an aluminum tube 22 embedded at its right end in the material of the stem and terminating short of the baffle 24 to leave a substantial intervening space. The baffle 24 is a cupshaped member telescoped over and separated from the draft tube 26 which passes through the shank 12 and terminates at the base of the bowl in open communication with the interior of the bowl.

40 In Figures 1 and 2 the baffle is provided with three slightly resilient arms 28 shaped at their ends to conform to the outside contour of the draft tube 26. Thus the baffle is frictionally held in place on the draft tube 26 when the stem and bowl are

50 separated, as for cleaning.

The joint between the stem and bowl presents serious problems. It must permit easy separation and reassembly of the parts, as the accumulation of condensates in the stem necessitates separation of the parts to discharge the condensate. It must continue to form a liquid tight seal. And over a long period of use including many removals and replacements of the stem, it must continue to maintain sufficient friction to carry the weight of the bowl while the user is smoking without any danger of separation of the parts and at the same time not tighten up to such an extent as to impede the user in separating the parts.

In Figure 2 the cupshaped terminal fitting over the end of the shank 12 includes the peripheral flange 30, the cylindrical portion 32, and the flat cap ring 34. This cap is preferably of plastic material of the same general character as the material of the stem, and is accurately fitted to the end of the shank 12. Beyond the cap I provide an annular packing ring 36, and beyond the packing ring I position the holding ring 38 of metal which is drawn tightly against the packing ring by two woodscrews 40, which screws pass through aligned holes in the ring 38, packing ring 36, and cap ring 34 to enter the body of the shank 12.

After considerable experimentation I have secured best results by using for the packing 36 either Neoprene or a high quality of natural rubber. The packing ring is firmly squeezed in place by tightening the woodscrews 40, and its peripheral surface should be painted with glycerin or dusted with fine powdered graphite. I have found that the resulting structure resists the action of the liquids accumulating in the stem for an indefinite length of time, and also remains watertight with substantially constant friction throughout the life of an ordinary pipe. The constancy and reliability of the friction may be somewhat improved by forming a rabbet at 42, so that the portion of the packing 36 that actually rubs against the stem 14 has room to expand just a little parallel to the axis of the stem and accommodate itself to the extremely minor changes in the dimensions of the parts resulting from thermal expansion and contraction, and from wear.

It will be apparent that the products of combustion withdrawn from the bowl 10 through the draft tube 26 will enter the baffle 24 and there reverse their direction of motion and pass out between the fingers 28 and into the chamber 20. In practice the chamber 20 encloses a volume of the same order of magnitude as the volume with-

drawn by the smoker in taking a medium sized puff, but in any event the products of combustion remain in the chamber 20 for an appreciable length of time in contact with the outer walls thereof and subject to the cooling action of the relatively thin wall of the stem, which is in turn cooled by contact with the outside air. In this way, without cooling the products of combustion to such a degree as to deprive the smoker of that feeling of warmth which he desires and finds gratifying, cooling of nearly all the products of combustion is accomplished before they leave the chamber 20 to such a temperature that the tarry constituents of the woody fibre which is contained to some extent in even the best tobacco, are effectively changed to liquid form in the chamber 20 and accumulate on the walls of the chamber so that the smoker does not inhale them. It happens that these high boiling point tarry constituents are among the most harmful of the products of combustion in tobacco, physiologically speaking.

The effectiveness of this cooling is such that the user develops materially different habits in smoking. Specifically, instead of filling the bowl completely full and consuming only about $\frac{1}{3}$ of the filling, leaving damp, soggy tobacco unburned in the bottom of the pipe to be scraped out before filling again, the user is likely to put somewhat less tobacco in the bowl. And regardless of how much tobacco is in the bowl, the user soon develops the habit of smoking until all the tobacco in the bowl is completely burned. With a mass of unburned tobacco in the bottom of the bowl no bigger than a navy bean, the smoker can still apply a match flame to that mass and smoke it up without burning his tongue. Thus, after the smoker becomes accustomed to the pipe, he always keeps the heel of the pipe dry and clean. Liquid accumulates in the chamber 20 during the use of the pipe and a careful smoker will remove and empty the pipe after every eight or ten pipefuls. However, the capacity of the chamber is such that from three to five times that much smoking can be done without emptying the stem. And unless and until a careless smoker permits the stem to become at least one-third full of accumulated liquid, there is no practical risk that the smoker will draw any of that liquid into his mouth inadvertently. This contrasts with an ordinary pipe where the accumulation of only six or eight drops of condensate in a wet heel is apt to give the smoker a "drink."

In the embodiment of Figures 3 and 4, the baffle 44 carries two axially extending prongs 46, the ends of which engage the plate 38 to position the baffle correctly, and the baffle is held in position by the friction of oppositely disposed leaf springs 48 bent back from a sleeve 50 permanently assembled on the draft tube 26. Such a construction renders removal and cleaning of the baffle itself easier than with the structures of Figures 1 and 2. And when the pipe is in active use, a small proportion of the least volatile constituents of the smoke will condense and accumulate on the inner surface of the baffle, so that about once a month it is desirable to remove the baffle and wipe it clean inside.

Referring now to Figures 5, 6, and 7, the baffle 52 is provided with three diverging prongs 54 for spacing purposes, and the baffle is supported on the draft tube 26 by two leaf springs 56 extending back from the rear edge of the collar 58.

In this embodiment I have indicated a metal

cap 60 immediately adjacent the shank 62, and the clearance to secure the best action is obtained by forming a rabbet 64 in the adjacent face of the backing 66 instead of having the rabbet in the cap.

In Figure 5 I have also illustrated a stem made up of a small tube 68 within which is fitted a separate bit member 70 and the exit tube 72 is mounted in the bit 70. However, the bit 70 is firmly assembled with the tube 68 in manufacturing the device so that the only separation of the parts by the user is by removal of the entire stem comprising the tube 68, the bit 70, and outlet tube 72 from the remainder of the device.

In the embodiment of Figures 1 and 2, the fingers 23 are first bent outwardly a little beyond the outer surface of the cap 24 to assure that the cap will not be assembled in a stem that does not provide adequate clearance outside the cap. The fingers then extend inwardly into contact with the tube 26 and finally outwardly again at their extreme ends. This last outward extension or curvature affords guidance to the user in assembling the parts and facilitates the initial movement of the cap over the end of the tube. The ends of the fingers about the joint structure and act as a stop so that the user will position the cap with its closed end properly spaced from the end of the tube 26.

In the embodiment of Figures 3 and 4 the fingers 48 are provided with a reverse extension or curvature at their extreme ends so that the same function of facilitating the initial movement of the cap is secured.

In the embodiment of Figures 5, 6, and 7, the fingers 56 are provided with a reverse extension or curvature at their extreme ends for the same purpose. In the two embodiments last mentioned, the stop function is secured, but not by the same fingers which constitute the resilient support.

Without further elaboration the foregoing will so fully explain my invention that others may, by applying knowledge current at the time of application, readily adapt the same for use under various conditions of service. It will, for instance, be obvious that such springs as 48 in Figure 3, might be mounted on, or made integral with, the ring 38.

I claim:

1. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending formations at the opposite end; said formations having outwardly extending yieldable portions at the free ends thereof; whereby, upon application of the cylindrical member to the tube, the outwardly extending portions will facilitate initial movement of the member over the adjacent end of the tube.

2. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending fingers at the opposite end, said fingers having portions extending inwardly toward the axis of the member to frictionally engage the outer surface of the tube to support said cylindrical member and to provide a continuous circumferential space between the inner surface of the cylindrical member and the outer sur-

face of the tube and to substantially axially align said tube and member.

3. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending fingers at the opposite end, said fingers having portions extending inwardly toward the axis of the member to frictionally engage the outer surface of the tube to support said cylindrical member and to provide a continuous circumferential space between the inner surface of the cylindrical member and the outer surface of the tube and to substantially axially align said tube and member; said smoking device being provided with a stem and the projecting fingers having a portion thereof so constructed as to provide circumferential spaced relation between the inner wall of the stem and the outer wall of said cylindrical member.

4. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending formations at the opposite end; said formations having outwardly curved yieldable portions at the free ends thereof; whereby, upon application of the cylindrical member to the tube, the curved portions will facilitate initial movement of the member over the adjacent end of the tube; said resilient formations being spaced from each other for a portion of their length to provide a plurality of smoke communicating means.

5. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending formations at the opposite end; said formations having outwardly curved yieldable portions at the free ends thereof; whereby, upon application of the cylindrical member to the tube, the curved portions will facilitate initial movement of the member over the adjacent end of the tube; said resilient formations constituting fingers constructed and arranged to space the inner wall of the cylindrical member from the outer wall of the tube.

6. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending formations at the opposite end; said formations having outwardly curved yieldable portions at the free ends thereof; whereby, upon application of the cylindrical member to the tube, the curved portions will facilitate initial movement of the member over the adjacent end of the tube; the free ends of said formations having surfaces facing the adjacent end of said chamber and adapted to act as stops.

7. A tobacco smoking device comprising a smoke chamber; a tube therein and a cap adapted to be supported on said tube; said cap comprising a cylindrical member closed at one end and having a plurality of resilient longitudinally extending formations at the opposite end; said formations having outwardly curved yieldable portions at the free ends thereof; whereby upon application of the cylindrical member to the tube, the curved portions will facilitate initial

movement of the member over the adjacent end of the tube; said formations having curved portions, the outer surfaces of which extend laterally and outwardly a greater radial distance than any point on the outer cylindrical surface of the cylindrical member.

8. In a tobacco smoking device of the type comprising a bowl, and a hollow tapered stem connected to said bowl by a quick-detachable slip joint and defining a smoke chamber for storing and cooling smoke; a tube entering said chamber at the inlet end thereof; and a cap adapted to be telescoped over the end of said tube and supported on said tube; said cap comprising a cylindrical member closed at one end; said cylindrical member having a plurality of resilient formations remote from said closed end and extending inward to have frictional engagement with said tube and thus support said cap in axial alignment and with a space between its inner wall and the adjacent outer wall of said tube and another space between its outer wall and the adjacent inner wall of said stem; said formations having outwardly curved portions adjacent the portions in contact with said tube; whereby, upon application of said cap to said tube, said outwardly curved portions will facilitate initial movement of said cap over the adjacent end of said tube; said formations having stop portions terminating in a direction away from said closed end and adapted to constitute an abutment to limit the movement of said cap over said tube to a position where said closed end is spaced from the end of said tube.

9. In a tobacco smoking device of the type comprising a bowl, and a hollow stem connected to said bowl and defining a smoke chamber for storing and cooling smoke; a tube entering said chamber; and a cap adapted to be telescoped over the end of said tube and supported on said tube; said cap comprising a cylindrical member closed at one end; said cylindrical member having a plurality of resilient formations remote from said closed end and extending inward to have frictional engagement with said tube and thus support said cap in axial alignment and with a space between its inner wall and the adjacent outer wall of said tube and another space between its outer wall and the adjacent inner wall of said stem; said formations having outwardly curved portions adjacent the portions in contact with said tube; whereby, upon application of said cap to said tube, said outwardly curved portions will facilitate initial movement of said cap over the adjacent end of said tube.

10. In a tobacco smoking device of the type comprising a bowl, and a hollow stem connected to said bowl and defining a smoke chamber for storing and cooling smoke; a tube element entering said chamber; a cap element adapted to be telescoped over the end of said tube element and supported by said tube element; said cap element comprising a cylindrical member closed at one end; and a plurality of resilient fingers on one of said elements and having frictional engagement with the other element; said fingers constructed and arranged to support said cap element in axial alignment and with a space between its inner wall and the adjacent outer wall of said tube element; said elements being constructed and arranged to leave another space between the cylindrical portion of said cap element and the inner wall of said stem; said fingers having reversely directed portions adjacent the

portions having frictional contact; whereby, upon application of said cap element to said tube element, said reversely directed portions will facilitate initial movement of said cap element over the adjacent end of said tube element.

- 5 11. A device according to claim 10 wherein the cap has an outwardly flaring portion adapted to constitute an abutment to limit movement of said cap to a position where said closed end is spaced from the end of said tube.

- 10 12. A device according to claim 10 wherein the fingers have curved portions and an intermediate portion of the cap engages one or more curved portions of the fingers.

- 15 13. A device according to claim 10 wherein one portion of the cap contacts the inner surface of a stem wall.

14. A device according to claim 10 wherein the cap has outwardly projecting fingers having

their free ends in spaced relation to each other.

15. A device according to claim 10 wherein the fingers each have a curved portion and the curved portion of the resilient fingers is in spaced relation to an end of the chamber.

16. A device according to claim 10 wherein projections are interposed between said fingers and constitute an abutment to limit movement of said cap to a position where said closed end is spaced from the end of said tube.

17. A device according to claim 10 wherein projections having a transverse curved formation are interposed between said fingers and constitute an abutment to limit movement of said cap to a position where said closed end is spaced from the end of said tube.

18. A device according to claim 10 wherein the fingers have ogee curves.

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