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SMOKING PIPE

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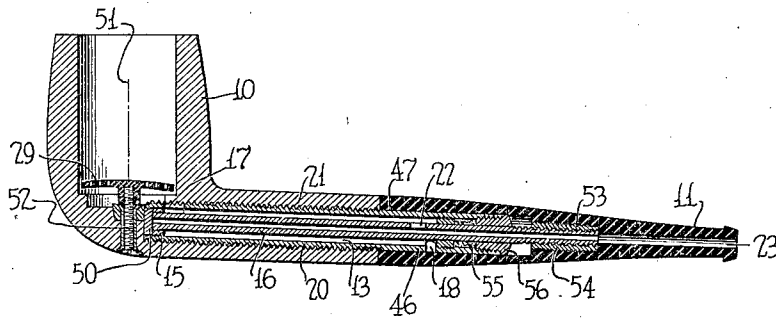
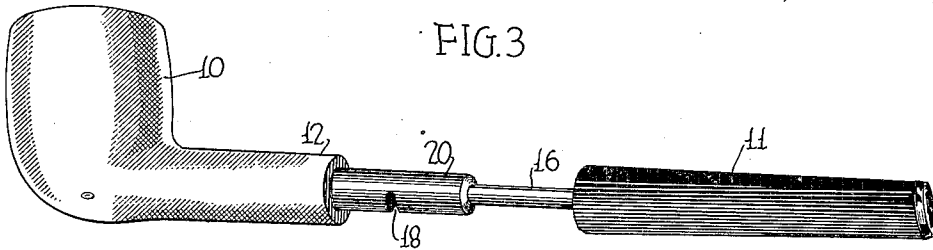


FIG. 1

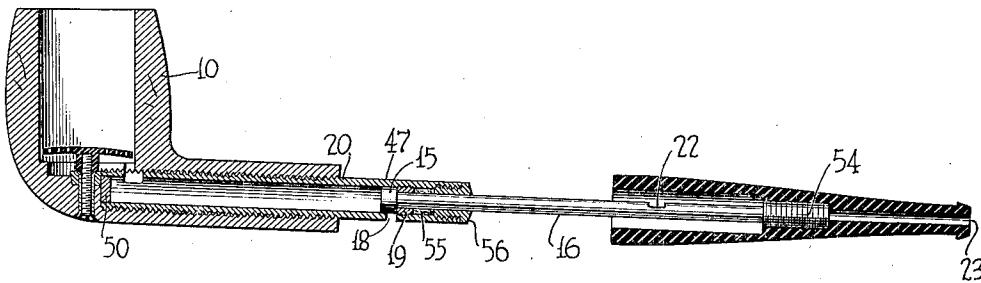


FIG. 2

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SMOKING PIPE

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Application March 1, 1934, Serial No. 713,564

9 Claims. (Cl. 131-12)

My invention consists of a specific improvement of the smoking pipe the subject of the application Serial No. 713,558, filed March 1, 1934 in the name of John P. Tarbox. That pipe embodies inventions applicable to all types of smoking pipes whether for loose tobacco, tobacco in charged form as in envelopes, wrappers, e. g., cigarettes and cigars.

According to the Tarbox invention, there is interposed between the bowl of the pipe and the mouthpiece a displacement force pump having valved connections with the pipe bowl and the atmosphere, respectively. The chamber of the pump affords the draft connection between the bowl of the pipe and the mouthpiece and collects the deposits ordinarily collected in pipe stems and upon the operation of the displacement pump such contents are forcibly ejected to atmosphere while the pipe bowl is cut off from the chamber.

The objects of my invention are to simplify and strengthen the construction, to render it more practicable to application to pipe stems of the form ordinarily used, to effect an operation with a smaller number of manipulated movements and to make the action more efficient.

To these ends I utilize as in the Tarbox invention the reciprocating plunger type of displacement force pump the displacement chamber of which constitutes the draft connection between the bowl and the stem, arrange the chamber with one end projecting to the bowl but not quite to the axis thereof and the other end to the mouthpiece, close both ends of the chamber, effect a valved connection with the bowl near the closure at that end but removed slightly therefrom whereby the plunger may be normally accommodated between the port to the bowl and the adjoining closed end, utilize a tubular plunger, connect the plunger to the mouthpiece by projecting the tubular rod through the closed end of the chamber adjoining the mouthpiece and screw threading it in the mouthpiece so that its hollow interior connects axially with the draft opening aperture in the mouthpiece, locating the port to atmosphere immediately adjoining the closed mouthpiece end of the chamber, provide the mouthpiece with an extension which normally covers this port to atmosphere, but which when the mouthpiece is withdrawn exposes it, and providing the hollow piston rod with an aperture which when the mouthpiece is in normal position, connects the pump chamber with the mouthpiece but which when the mouthpiece is withdrawn, closes off such connection.

That I have attained the objects of my inven-

tion will be apparent upon the picturization of this arrangement of parts through the aid of the accompanying drawing.

Of the drawing—

Figure 1 is an axial cross section in a plane including both the axis of the stem and the axis of the bowl of the parts in the relative positions of normal use in smoking.

Figure 2 is a similar cross section in which the parts of the pump are shown in the ejecting position; and

Figure 3 is a view with the parts in a similar relation but showing an external perspective without cross section.

10 is the bowl of the pipe. 11 is the mouthpiece and 12 is the displacement chamber of the stem in general. 13 is the reciprocating plunger type displacement force pump in general. 15 is the plunger or piston of this pump. 16 is the plunger rod. 17 is the port from the chamber 13 to the bowl. 18 is the port from the chamber to atmosphere. 19 is the closed head of the cylinder at its ejection end. 20 is a tube which constitutes the walls of the cylindrical displacement chamber 13. 21 is the aperture in the stem 12 at large into which this tube 20 is screw threaded as shown.

The bowl end of the displacement chamber is closed by a head 50. The port 17 communicating with the bowl 10 is spaced from the head 50 by a distance between it and the head sufficient normally to accommodate the piston or plunger 15 whereby when the plunger 15 is moved a short distance away from the head 50, the port 17 is closed. The head 50 lies to one side of the axis 51 of the bowl whereby support 52 for a perforated guard plate 29 may be located on the axis. This support is in the form of a screw as shown. The screw may be withdrawn from the bottom of the bowl, and the guard plate 29 threaded thereon removed from the top of the bowl. The guard plate prevents the access of solid material to the port 17.

The plunger 16 is hollow being in the form of a tube and is projected through the head 19 at the opposite end of the tube 20 into the mouthpiece 11 and in axial alignment with the mouthpiece opening 23 whereby the hollow of the tube 16 constitutes the draft connection with the mouthpiece 11. The end of the tube has a threaded connection 53 with a metal insert 54 fixedly secured as by threaded connection in the body of the mouthpiece 11. By the axial movement of the mouthpiece 11 toward and from the stem 12 the plunger 15 may be reciprocated within the cham-

ber 13 to forcibly eject the contents of the chamber through the port 18.

The port 18 is normally closed to atmosphere by the forward extension or skirt 46 of the mouthpiece which has a cylindrical or tapered seating 47 with the exterior of the outer end of the tube 20. This extension 46 extends toward the bowl from the port 18 a sufficient distance to make the mouthpiece draft-tight upon the seat 47.

10 Draft connection between the hollow of the tubular plunger 16 and the chamber 14 consists of a draft aperture 22 in the wall of the tube in such position that when the parts are in their normal relation as shown in Fig. 1, the aperture 22 opens into the chamber 14 in advance of the head 19. When the tube is withdrawn, however, to the position shown in Fig. 2, this aperture is, during the initial such movement, withdrawn through the head 19 and the chamber is sealed against access to the tube 16 and the forcible ejection of the contents of the chamber is assured.

The head 19 is fixedly threaded or otherwise secured immediately adjoining the port 18 clearly shown in Figs. 2 and 3 as being axially narrow and circumferentially long whereby a sharp and clean ejection is assured when the parts are drawn to the position shown in Fig. 2. To facilitate assembly this head may be threaded into place. Between it and the mouthpiece end of the tube 20 is placed a filling 55 of absorbent material retained in position by an outer head 56 likewise screw threaded into the end of the tube. This head 56 surrounding the piston rod 16 not only secures this filling in place but also constitutes with the head 19 an elongated bearing for the piston rod 16 whereby the rod 16 itself of generous proportions maintains the mouthpiece (with which it is firmly connected through the insert 54), in firm and aligned relation to the bowl 10. (See Fig. 2.) The filling wipes the stem 16 clean and free from products which might cause it to gum or stick as the stem is withdrawn.

It will be seen through this picturization that above all the construction is simple, that it is strong and sturdy, that it is efficient, that but one movement is necessary to operate it, a reciprocation of the stem 11, though a slight rotary movement may be used to make the stem enter and leave its seat 47 readily, that there is an elongated and close seating bearing 47 between the mouthpiece and the remainder of the stem, that the parts are simple and cheap to manufacture, easily assembled, that the incorporation of the displacement pump in the stem does not alter its outward appearance in any way, that it does not project through the bowl, indeed, does not reach all the way to the axis of the bowl, thereby not only allowing for an axial support of the guard plate but also preserving unimpaired the bottom contours of the bowl, and that in external appearance the bowl, the stem and the mouthpiece are in all respects essentially the same in organization and principle as in the best forms of pipes in common use today. Moreover, the making of the rod 16 in tubular form in axial alignment with the mouthpiece opening 23 enables one to clean this tube by the usual pipe cleaner inserted through the stem.

The modifications of which my invention are susceptible are without doubt several in number. The generic spirit of this practical improvement should govern the scope of the annexed claims rather than the terms which my present inade-

quate knowledge of future possibilities impose upon me.

What I claim as new and useful and desire to protect by Letters Patent is:—

1. A pipe comprising a bowl, a mouthpiece, a piston type displacement force pump between the bowl and the mouthpiece through the chamber of which the draft connection between the bowl and the mouthpiece is effected, the chamber of the pump having a headed end adjoining the mouth-piece through which the operating piston rod of the pump extends, together with a lateral port to atmosphere at said headed end, and the said piston rod having a hollow interior through which the draft connection of the mouthpiece with the chamber is effected.

2. A pipe comprising a bowl, a mouthpiece, a piston type displacement force pump between the mouthpiece and the bowl and in axial alignment with the mouthpiece, the chamber of the pump adjoining the mouthpiece being headed and the piston rod passing through the head and having a fixed operating connection with the mouthpiece, the chamber being provided with a lateral port to atmosphere at the headed end, and the piston rod having a hollow interior in axial extension of the hollow interior of the mouthpiece wherethrough draft connection between the mouthpiece and the chamber of the pump is effected.

3. A pipe comprising a bowl, a mouthpiece and a piston type displacement force pump between the bowl and the mouthpiece comprised of a draft tube constituting the chamber of the pump having its opposite ends substantially closed independently of the mouthpiece, a port near the bowl end through which the chamber communicates with the bowl of the pipe, a port immediately adjoining the mouthpiece end through which the chamber communicates with atmosphere, a piston normally lying between the bowl port and the adjacent end of the tube, and a piston rod having a hollow interior normally in communication with the pump chamber and in axial extension of the hollow interior of the mouthpiece extended through the opposite end of the tube connected with the mouthpiece for operation of the piston thereby.

4. A pipe comprising a bowl, a mouthpiece, a piston type displacement force pump interconnecting the bowl and the mouthpiece through the chamber of which the draft connection between the bowl and the mouthpiece is effected, the chamber of the pump having a permanently substantially closed end adjoining the mouthpiece, and a port to atmosphere immediately adjoining the closed end, a hollow piston rod connecting the piston through the closed end of the chamber to the mouthpiece and having an aperture which lies within the permanently closed end of the chamber when the piston is at the opposite end, together with means connected with the mouthpiece normally closing the port to atmosphere.

5. In a pipe comprising a bowl, a mouthpiece, a piston type displacement force pump through the chamber of which draft connection is effected between the bowl and the mouthpiece, the chamber at the bowl end being permanently substantially closed, the chamber at the mouthpiece end having a removable head independent of the mouthpiece, and a piston having a hollow piston rod extended through said head and secured telescopically for an elongated extent axially to the mouthpiece whereby the pump is operated by reciprocation of the mouthpiece.

6. A pipe comprising a bowl, a mouthpiece, a reciprocating piston type displacement force pump through the chamber of which the draft connection is effected between the bowl and the mouthpiece and comprising a pump cylinder having one end telescoped within the mouthpiece, terminating at the bowl end short of the axis of the bowl but projecting from the stem within the bowl and there having a port connection with the bowl together with a screen guard for the port having a support on the axis of the bowl, the mouthpiece being connected to the pump plunger to operate the same.

7. In a pipe comprising a bowl, a mouthpiece, a reciprocating piston type displacement force pump through the headed chamber of which the draft connection is effected between the bowl and the mouthpiece, the piston of which pump is provided with a plunger rod which passes through a head in one end of the chamber, and a packing material surrounding the rod adjoining the head, together with a port to atmosphere adjoining the head, whereby the contents of the chamber are forcibly ejected upon operation of the pump.

8. In a pipe comprising a bowl, a mouthpiece, a reciprocating piston type displacement force pump through the headed chamber of which

the draft connection is effected between the bowl and the mouthpiece, the piston of which pump is provided with a plunger rod which passes through a head in one end of the chamber, and a greatly elongated axial bearing for the rod where it passes through the head, said rod being connected with and operated by the mouthpiece, together with a port to atmosphere from the chamber adjacent the bearing, whereby the contents of the chamber are forcibly ejected upon operation of the pump.

9. A pipe comprising a bowl, a mouthpiece, a displacement force pump between the bowl and the mouthpiece through the chamber of which the draft connection between the bowl and the mouthpiece is effected, the chamber of the pump having a headed end adjoining the mouth-piece through which the operating piston rod of the pump extends, together with a port to atmosphere at the said headed end, and the said piston rod having a hollow interior through which the draft connection of the mouthpiece with the chamber is effected, said port being circumferentially arcuate and less than a complete circle in form transversely of the chamber and having a width less than the length of the arc.

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