Nov. 17, 1953

H. B. GROW

2,659,375

PIPE PRECONDITIONER

Filed March 15, 1949

Fig. 1.

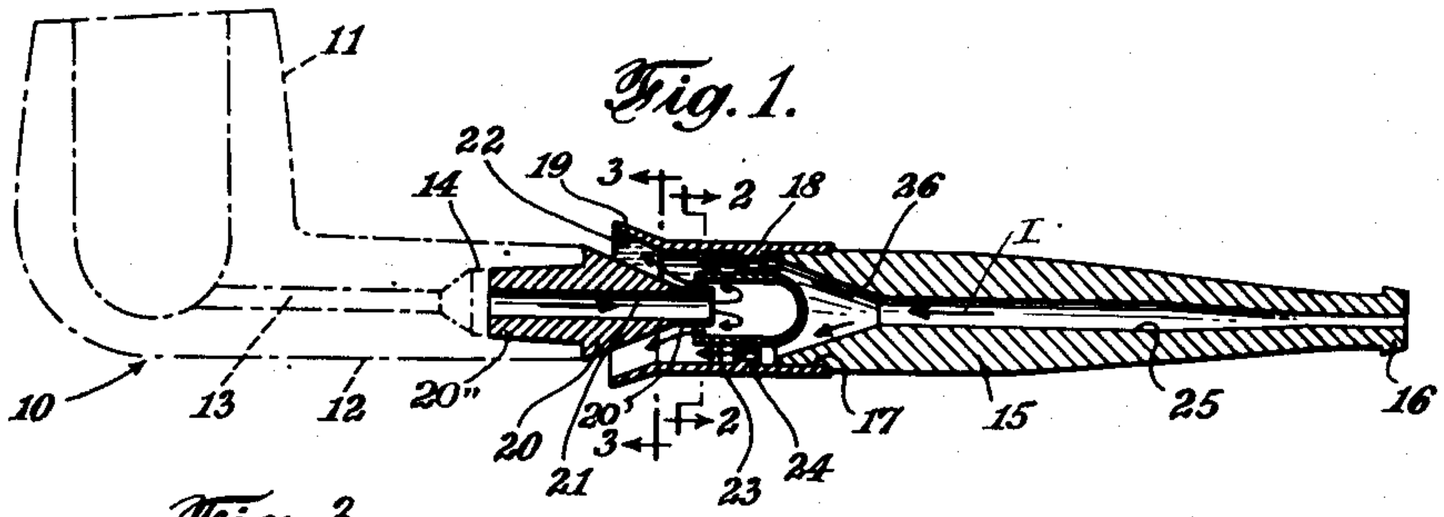


Fig. 3.

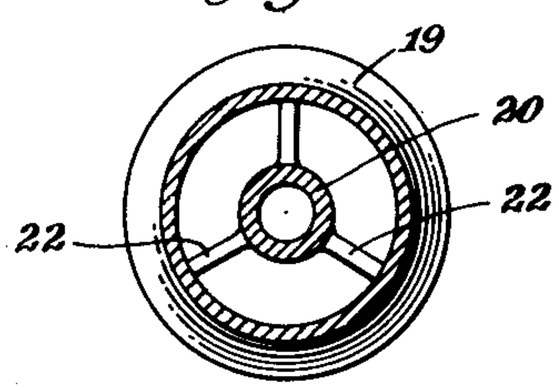


Fig. 2.

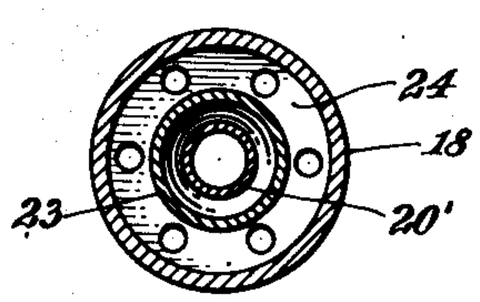


Fig. 4.

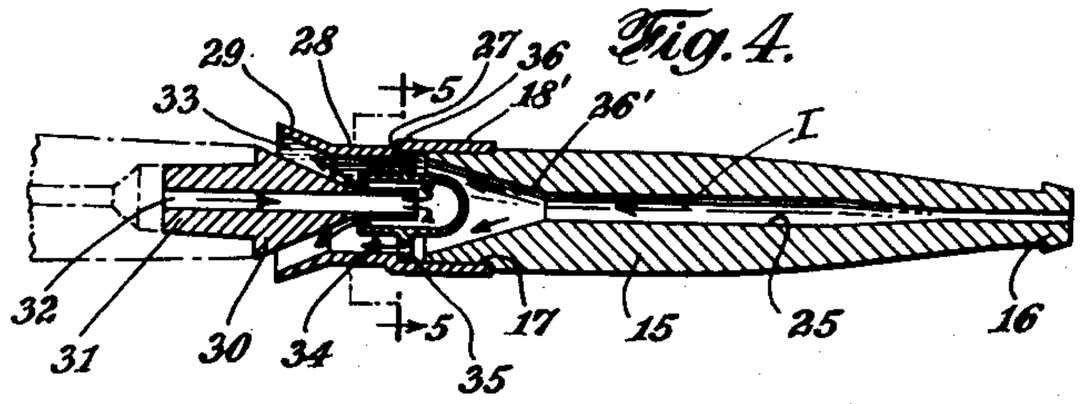


Fig. 5.

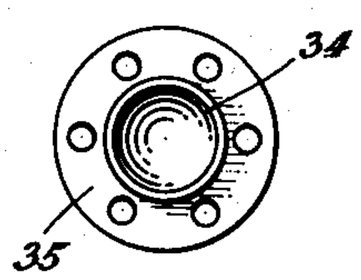


Fig. 6.

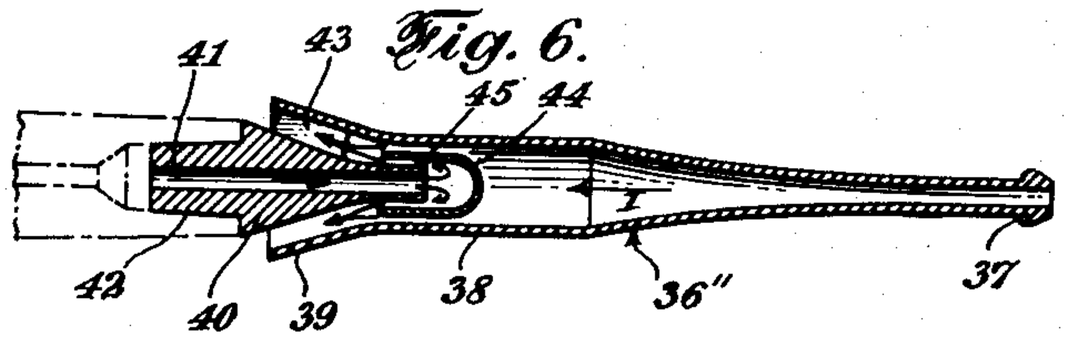


Fig. 7.

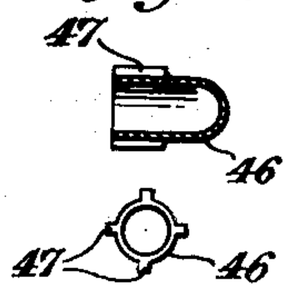
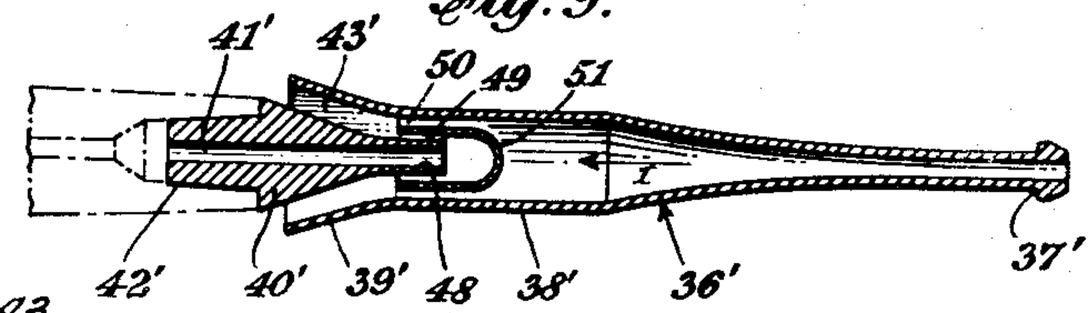


Fig. 8.

Fig. 9.



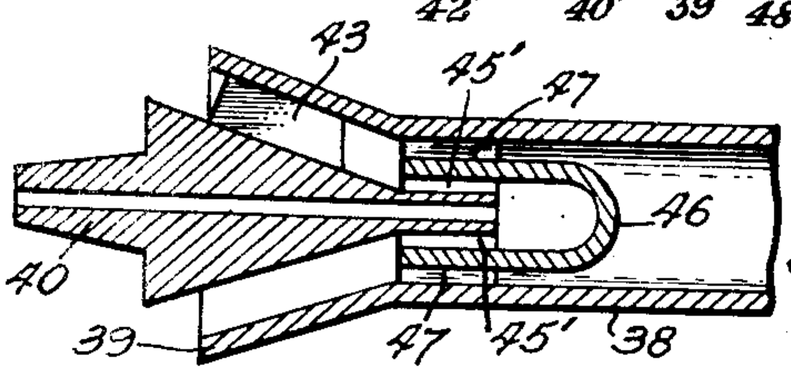


Fig. 10.

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PIPE PRECONDITIONER

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12 Claims. (Cl. 131—172)

1

The present invention relates to a novel appliance facilitating the pre-conditioning or breaking-in of smoking pipes or of similar smoking devices by the future user thereof.

When a new or freshly reamed-out smoking pipe is being used, the smoker experiences a rather unpleasant, off-taste "smoke," usually accompanied by a harsh burning sensation while consuming the first two or three bowlfuls, whereafter the pipe gradually becomes mellow, and finally "sweet."

In some stores one can buy a mechanically "Pre-Smoked" pipe, but a pipe smoker prefers to break in his pipes himself.

The present invention has for its prime object the provision of an appliance which will permit any pipe smoker to break in his own pipes without subjecting his mouth and throat to the irritation and unpleasant taste of such procedure.

Another object of this invention is the provision of a pre-conditioning device which may be readily associated with most any existing pipe body by removing the pipe stem and temporarily replacing it by the device for the duration of breaking in a pipe bowl, and which device is based on the principle of an aspirator and is so arranged that when air is blown into the device, such air will pass outwardly and in so doing will draw smoke-mixed air from the bowl of a pipe and eject it at a point where the device is temporarily attached to the pipe in place of a pipe stem.

The foregoing general and other specific objects and other important advantages of the present invention will become more fully understood from the ensuing description in conjunction with the accompanying drawings, showing a few of the presently preferred embodiments thereof, and wherein:

Fig. 1 represents a vertical cross section through one form of the present invention as applied to an existing pipe;

Fig. 2 is an enlarged section taken on line 2—2 through Fig. 1;

Fig. 3 is an enlarged section taken on line 3—3 through Fig. 1;

Fig. 4 illustrates a modified form of a pipe preconditioning device;

Fig. 5 is an enlarged end view of an air deflector as used in the embodiment shown in Fig. 4, when looking in the direction of line 5—5 of that figure;

Fig. 6 is a vertical cross section through another embodiment of the present invention;

Fig. 7 is a vertical section through a modified form of an air deflector that may be employed;

Fig. 8 is an end view thereof;

Fig. 9 is a vertical cross section through still another embodiment of the present invention, and

Fig. 10 is a fragmental vertical cross section through an additional modification of the device similar to that shown in Fig. 6 and employing a deflector seen in Figs. 7 and 8.

2

In Fig. 1 numeral 10 indicates a smoking pipe having a bowl portion 11 and a shank or stem-attaching portion 12. The latter is usually provided with a passage 13 entering the bowl and a preferably conical recess 14, forming a continuation of passage 13, and serving for the insertion thereinto of the tapered end of a pipe stem.

The pre-conditioning device shown in Fig. 1 comprises a tubular member 15 in the form of a pipe stem, at one end of which is a mouthpiece 16, while the other end is offset at 17. Associated with offset end 17 is an aspirator structure comprising a cylindrical formation 18 terminating in an outwardly flaring, funnel-shaped outlet 19. Within cylinder 18 and outlet 19, and spaced from both, there is a substantially conical member 20 provided with a throughpassage 21 which is aligned with the bore of stem 15. The spacing between conical member 20 and the flared outlet 19 is accomplished by spaced radial ribs 22 extending between the outer surface of conical member 20 and the interior surface of outlet 19.

At the apex of conical member 20, which preferably terminates in a tubular formation 20', there is provided a substantially cup-shaped air deflecting element 23 which is supported by a perforated ring 24 formed within the interior wall of cylinder 18.

The exterior end 20'' of conical member 20 is offset and tapered for engagement with the tapered interior of stem-attaching portion 12. It will be observed that bore 25 of stem 15 is widened at 26 in the vicinity of air deflecting cup 23 so that air may flow readily past the cup and outwardly through flared outlet 19.

Fig. 4 illustrates a modified construction of the device, in which is again employed a stem 15 provided at one end with a mouthpiece 16 while its other end is reduced at 17. The aspirator structure constitutes a substantially cylindrical member 18', which is offset at 27 to form a reduced portion 28 which terminates in a flared outlet 29.

Projecting through said outlet into reduced cylindrical portion 28 is a conical member 30 having a tapered extension 31 adapted for engagement with the stem-engaging recess of a pipe. Conical member 30 is provided again with a through passage 32 and is spaced from outlet 29 by radial ribs 33. The apex of conical member 30 has a tubular terminus which extends into the reduced cylindrical portion 28 and is surrounded by an air deflecting cup 34, held in place by a disc-shaped, perforated support or plate 35 which is removably seated against a shoulder formed by recess 36 provided in the larger cylindrical portion of member 18'. Pipe stem 15 again is provided with a bore 25 which

is conically enlarged at 26' in the vicinity of air deflector 34.

The devices shown in Figs. 1 to 4 are very similar to one another with the exception that cup-shaped air deflector 23 in Fig. 1 is fixedly held within cylindrical structure 18, whereas in the modified form shown in Fig. 4 the cup 34 may be readily removed, whereby the entire device may be easily cleaned.

The embodiment illustrated in Fig. 6 discloses a simplified form of a pipe pre-conditioning appliance. In that figure numeral 36'' denotes a hollow, one-piece stem structure provided with a mouthpiece 37 at one end. From that end the stem body and its hollow interior becomes gradually enlarged and forms a cylindrical portion 38 terminating in a funnel-shaped air outlet 39. Within that outlet there is removably held conical member 40 which again has a throughpassage 41 and a tapered pipe-engaging extension 42.

Conical member 40 is provided with radial ribs 43 which form spacers between the conical member and outlet 39. These ribs are integral with conical member 40 so that the latter may be readily disassociated from stem structure 36''. The reduced apex of conical member 40 terminates in a tubular portion, the end of which is surrounded by a cup-shaped air-deflector element 44. Said element is held in spaced relation in respect to the tubular apex portion by ribs 45 extending from the element. Conical member 40 may be withdrawn together with air-deflector element 44 from stem structure 36'' for purposes of cleaning, and when thus withdrawn, deflector 44 may be removed.

In Figs. 7, 8 and 10 is shown a modified form of a cup-shaped air-deflector 46, provided at its cylindrical exterior with spacing ribs 47 intended to engage the interior of cylindrical portion 38. Spacing ribs 47 are designed to center cup 46 within cylindrical portion 38 of the stem structure, as is evident from Fig. 10. Ribs 45 projecting from the tubular apex portion of conical member 40 now engage the interior surface of centered cup 46, whereby conical member 40 becomes aligned with the hollow interior of the stem structure.

The modified embodiment of the device shown in Fig. 9 is similar to that illustrated in Fig. 6. There is again employed a stem structure 36' having a mouthpiece 37' and a cylindrical portion 38' and a flaring outlet 39'. A cone-shaped member 40' extends into outlet 39', and its cylindrical apex end 48 projects into cylindrical portion 38'. Conical member 40' has the usual throughpassage 41' and a tapered extension 42'. The radial spacing ribs 43' extending from conical member 40' are longer than ribs 43 shown in Fig. 6, and extend over cylindrical apex portion 48, as at 49, where they are offset at 50 and form supports for cup-shaped air deflector 51. The latter is rendered readily removable when conical member 40' is withdrawn from the flared end 39' of the stem structure.

Operation

All of the devices presented in the drawings are intended to temporarily replace regular pipe stems supplied with smoking pipes. In order to facilitate such temporary exchange, the conical members in each of the devices shown have tapered extensions adapted to engage the tapered pipe-stem-engaging recesses of existing pipes.

When any one of the present devices is secured to a pipe, the pipe bowl is filled and lighted.

Now air is blown through the tubular member or stem structures in the direction indicated by arrow I. That air passes over the deflector cup and progresses between the cup and the cylindrical stem portion surrounding it, and is discharged outwardly through the flaring outlet.

As the air, entering through the mouthpiece, progresses in one direction toward the pipe bowl and passes the deflector cup on its way out through the flaring outlet, smoke-mixed air is drawn from the pipe in the opposite direction through the passage provided in the conical member and is deflected by the cup surrounding the apex of the conical member and is forced into and is mixed with the air stream escaping through the flaring outlet.

In this manner a pipe can be readily pre-conditioned by the owner until it is "broken in" sufficiently to assure a clean, sweet smoke, without subjecting him to the unpleasant effects of the heretofore usual procedure of breaking in new or freshly reamed pipes. After the pre-conditioning operation, which usually takes 2 or 3 bowlfuls, the present device is removed and the regular pipe stem is inserted into the pipe body for normal smoking purposes.

While in the foregoing specific structures of the present invention were described, all of these structures are based on the same principle of an aspirator whereby air under pressure is injected in one direction, to draw smoke-mixed air in the opposite direction and to deflect such drawn air to travel outwardly in substantially the direction of the injected air.

In the specification and in the annexed claims the expression "smoke-mixed air" is being used. That term refers to the mixture of smoke and air that flows from the bowl of the pipe through the passage of the conical member. That smoke-mixed air additionally mixes with air flowing through the mouthpiece. This second mixture of air and smoke-mixed air flows outwardly through the passage of the flaring outlet, such as shown at 19 in Fig. 1.

The five modifications illustrated in the drawings and described herein clearly indicate that changes and improvements may be readily incorporated in the device, for which reason such changes and improvements are to be considered to lie within the scope of the present invention as defined in the annexed claims.

I claim:

1. In a pipe pre-conditioning appliance of an aspirator construction, means for conveying air in one direction, said means comprising a tubular member, resembling a pipe stem, and having a mouthpiece at one end, other means in cooperation with and located at the other end of the tubular member for drawing a mixture of smoke and air in the opposite direction and for discharging it in substantially that one direction, said other means comprising a substantially conical body having a central passage, the apex of that body being directed towards said mouthpiece, a cup-like element spaced from and surrounding the apex, and said conical body having an extension for engagement with the shank of a pipe in place of an usual pipe stem.

2. In a pipe pre-conditioning appliance, a hollow tubular member having a mouthpiece at one end, an aspirator structure at the other end, said structure comprising a substantially tubular body constituting a continuation of said other end of the tubular member and terminating in an outwardly flared funnel, a substantially con-

ical member extending into and being spaced from said funnel and having a central through passage, the apex of the conical member being directed toward the mouthpiece of the tubular member, and a cup element surrounding and being spaced from said apex and from said funnel, the interior at the end of the tubular member adjacent to said cup element being sufficiently enlarged to facilitate the passage of air about said cup element and through the space between the funnel and said conical member outwardly, whereby a mixture of smoke and air is drawn by way of said through passage of the conical member into and out of said cup element, to be ejected with the air flowing through the space between the funnel and the conical member, the latter member terminating in a tip for engagement with a pipe shank in place of an usual pipe stem.

3. In a pre-conditioning appliance, an aspirator structure adapted for removable association with a smoking pipe and the like, said structure comprising a tubular member having a mouthpiece at one end and a conically flared outlet at the other end, a substantially conical member having a through passage extending concentrically into and being spaced from said flared outlet and having an extension for connecting it with a shank of a pipe, a deflector for a mixture of smoke and air at the apex of the conical member and being spaced from the latter and from said tubular member.

4. In a device of the class indicated, a tubular member having a mouthpiece at one end, an aspirator structure at its other end, said structure comprising a cylindrical portion forming a continuation of said tubular member and having an outwardly flaring air outlet; a substantially conical member spaced from and held within the latter and having a through passage, and a deflector for a mixture of smoke and air surrounding the apex of the conical member and being spaced therefrom and from said cylindrical portion.

5. In a device of the class indicated, a tubular member having a mouthpiece at one end, the other end being offset, an aspirator structure for removable association with said tubular member and comprising a substantially cylindrical portion engaged by said offset end of the tubular member, a flaring outlet forming a continuation of the cylindrical portion, a substantially conical formation being spaced from and extending into the outlet and having a through passage and a reduced end, the latter serving for removably securing the aspirator structure to a pipe, a cup-shaped deflector for a mixture of smoke and air surrounding the apex of said conical formation and being spaced from the latter and from said tubular member.

6. In a device as per claim 5, said cylindrical portion having an annular seat, and a perforated plate resting in said seat and supporting said smoked-mixed air deflector.

7. In a device of the class indicated, a tubular member having a mouthpiece at one end, its other end comprising a cylindrical portion terminating in a cone-shaped outlet, a substantially conical formation extending through said outlet into said tubular member and being spaced from both said outlet and said cylindrical portion and having a through passage and an attaching end for engagement with a pipe, and a cup-shaped deflector for smoked-mixed air at the apex of the conical formation and being spaced from the apex and from the tubular member.

8. In a device as per claim 7, said conical formation having spacing ribs adapted for engagement with the interior surface of said tubular member.

9. In a device as per claim 7, said conical formation having spacing ribs for engagement with the interior outlet surface of the tubular member, said ribs being offset at the apex of the conical formation and supporting said deflector for smoked-mixed air.

10. In a pipe pre-conditioning appliance, a stem-like structure adapted for removable association with the shank of a pipe in place of a pipe stem, an aspirator assembly removably associated therewith and being disposed within the structure and having a shank-engaging end, and comprising means for conveying air in one direction, and other means in cooperation with the first means for drawing a mixture of smoke and air in the opposite direction and for discharging it in substantially said one direction, said assembly including a cup-shaped deflector for smoked-mixed air having its open end directed toward the pipe bowl.

11. A pre-conditioning appliance for pipes and the like adapted for removable association with an existing pipe shank in place of a pipe stem, an aspirator structure comprising means for conveying air under pressure in one direction, other means for conveying smoke-mixed air in the opposide direction, and substantially cup-shaped third means interposed between the first-stated means and said other means for deflecting smoke-mixed air from said other means into the stream of air passing through and outwardly in respect to said first-stated means, thus causing the smoke-mixed air to flow in said one direction, the open end of said cup-shaped third means being directed toward the pipe bowl.

12. A pipe pre-conditioning appliance comprising a pipe stem-like structure provided with a mouthpiece and having an aspirator assembly removably associated therewith so that the latter assumes a position in close proximity to the pipe shank, said aspirator assembly including a substantially cup-shaped deflecting element for smoked-mixed air, said cup-shaped element having a convex surface facing toward the mouthpiece.

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