WATER PIPE OR BONG

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Field of Search 131/173, 206, 214, 215 R, 131/223, 222, 179, 194, 225

References Cited
UNITED STATES PATENTS
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1,336,233 4/1920 Ivory
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FOREIGN PATENTS OR APPLICATIONS
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OTHER PUBLICATIONS
Bong Pipe Manuel, Jak's Brand Prod. Co., P.O. Box 9, College Park, Maryland.

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ABSTRACT
An improved water pipe or bong wherein a water chamber for cleaning the smoke of ash and for cooling the smoke is located above an ash and contaminant trap. Smoke tubes from the trap to the water chamber end at different levels in the water so that one or more tubes are operative depending upon the strength of the draw. The bowl is heat insulated by refractory material from the rest of the pipe which is made of Plexiglas. A removable plug may be provided in the base of the pipe to facilitate cleaning the ash trap.

27 Claims, 16 Drawing Figures
WATER PIPE OR BONG

BACKGROUND OF THE INVENTION

In the orient, a device unique in appearance and known as a water pipe has been in existence and popularly used to smoke organic materials, including tobacco. The materials smoked in the orient are usually harsh, hot and very irritating to the lungs of the smoker if not tempered in some manner. Water pipes are one such means and the classic water pipe includes a water chamber interposed between the bowl, wherein the substance being smoked is burned, and a mouthpiece so that the smoke bubbles through the water to clean the smoke of ash and contaminants and to cool the smoke, thus making an otherwise very unpleasant experience quite pleasurable.

Very recently, water pipes have made an appearance in the Western World and are rapidly gaining in popularity. A few attempts at applying Western technology to the otherwise Eastern device have been made.

An early but complex water pipe is disclosed in U.S. Pat. No. 118,894 issued Dec. 27, 1870. A tobacco chamber is suspended by smoke pipes conveying smoke to a lower, water chamber having a sponge above the water and a mouthpiece tube connected to the top of the water chamber. The tobacco chamber includes perforated convoluted passageways to air cool the smoke and a small, sponge filled chamber for the collection of ash and oil by-products of tobacco combustion. A far simpler device is disclosed in U.S. Pat. No. 574,398 including a smoke and ash collection chamber about the tobacco bowl and tubing to convey the smoke to a lower water chamber to cool the smoke before it passes to the mouthpieces. Another variant in the art of water pipes with ash traps is disclosed in U.S. Pat. No. 1,513,147, where an ash trap is disposed vertically between an upper bowl and a lower water chamber.

Four other U.S. Pats., Nos. 2,690,753; 2,805,670; 2,807,268; and 2,825,342 disclose conventional Western style smoking pipes having small water chambers and convoluted passageways to cool the smoke.

A popular, presently marketed water pipe known as a bong is not disclosed in the prior patented art just discussed. The basic components of a bong are a single, elongate open pipe about 1 ½ inch in diameter seated on a square base to seal the bottom, the open upper end of the pipe being pressed against the face about the mouth of the smoker, a bowl for burning organic material and a single tube mounting the bowl and leading into the lower end of the elongate pipe at an angle, near the base of the bong. Water is placed in the lower end of the open pipe to a level above the junction of the bowl tube and open pipe so that smoke is bubbled through the water to cool the smoke and wash ash and contaminants from the smoke. Thus the main pipe is a combined water and inhalation chamber. The water must be changed frequently as it quickly becomes contaminated by combustion by-products. A "shotgun" or a small diameter hole may be located medially at the rear of the pipe above the water which is closed by the thumb of the smoker during initial stages of a smoke and is opened at the end of the smoke to ease the draw as smoke in the chamber is inhaled.

None of these aforementioned prior art water pipes disclose a bong, having a water chamber located above, rather than below. an ash trap, and including extensive, cooling tubing terminating in the water chamber at different levels whereby one or more of the inhalation tubes may be used, the water chamber thus being disposed so that the possibility of ash and oils entering the water is virtually eliminated so that pleasurable, clean and cool smoking may be enjoyed.

SUMMARY OF THE INVENTION

It is a primary object of the invention to provide a bong having a water chamber to cool the smoke, the water chamber being disposed above an ash and contaminant trap so that the possibility of contamination of the water is virtually eliminated.

It is another object of the invention to provide a bong made of synthetic material such as Plexiglas with a substance burning bowl insulated from the remaining bong structure.

It is yet another object of the invention to provide a bong having a substance burning bowl with high angled side walls whereby burning material tends to slide easily from the bowl to a lower ash trap so that the bowl remains clean over a long period of use.

It is a further object of the invention to provide a water bong with a base having an ash and contaminant trap, the trap including a removable plug to facilitate cleaning of the trap.

It is an object of the invention to provide a water bong with an ash and contaminant trap disposed beneath a smoke cooling water and inhalation chamber, the various sections being constructed in unitary fashion with divider plates segregating the sections.

It is still another object of the invention to provide a bong with a water chamber and an ash and contaminant trap beneath the water chamber, and a substance burning bowl located adjacent the base of the water chamber, with bifurcated primary tubing from bowl to trap and secondary tubing, segregated from the primary tubing, directed from the ash trap to the water chamber.

It is yet a further object of the invention to provide a bong with a water chamber and contaminant trap beneath the water chamber divided by a perforated plate into a lower, collection trap and an upper, primary smoke cooling chamber.

It is still another object of the invention to provide a bong having a tapered upper neck portion to direct fumes from the substance burning bowl away from the eyes and face of the smoker, and an upper, gently curved mouthpiece end to comfortably fit about the mouth of the smoker.

Yet another object of the invention is to provide a bong having water chamber, ash trap and base portions interwoven with each other for integral, secure construction.

Yet a further object of the invention is to provide a bong having an upper, water chamber and an ash and contaminant chamber disposed therebeneath, with primary bifurcated tubing from a substance burning bowl to the trap, and at least four secondary tubes from the trap to the water chamber.

Yet still another object of the invention is to provide a bong with a water chamber and an ash and contaminant trap disposed beneath the chamber, with primary tubing from a substance burning bowl to the trap and secondary tubing from the trap through the base of the
water chamber and into the water chamber, within the walls of the bong.

Further novel features and other objects of this invention will become apparent from the following detailed description, discussion and the appended claims taken in conjunction with the accompanying drawings.

**BRIEF DESCRIPTION OF DRAWINGS**

Preferred structural embodiments of this invention are disclosed in the accompanying drawings in which:

FIG. 1 is a perspective view of the bong;

FIG. 2 is an enlarged scale elevation view of the substance burning bowl of the bong;

FIG. 3 is an enlarged scale, partial vertical section view through the bowl and primary tubing as shown in FIG. 1;

FIG. 4 is a section view similar to FIG. 3, disclosing another embodiment of the invention;

FIG. 5 is an enlarged partial, detail, elevation view taken from the front, mid-portion of the bong as shown in FIG. 1;

FIG. 6 is an enlarged, partial section view taken along lines 6—6 of FIG. 1;

FIGS. 7 and 8 are partial detail views disclosing the smooth, mouth fitting contour of the upper end of the bong;

FIG. 9 is a bottom view of the base of the bong;

FIG. 10 is a partial central sectional view taken along lines 10—10 of FIG. 9;

FIG. 11 is a partial view of the base of the bong similar to FIG. 9 but showing another embodiment of the base;

FIG. 12 is a partial section view taken along lines 12—12 of FIG. 11;

FIG. 13, drawn to a smaller scale, is a perspective view disclosing another embodiment of the bong of the present invention;

FIG. 14 is a partial central sectional view of a bong disclosing yet another embodiment of the invention;

FIG. 15 is an elevation view of still another embodiment of the invention; and

FIG. 16 is a partial section view, similar to FIGS. 10 and 12, showing another embodiment of the base.

**DESCRIPTION OF THE PREFERRED EMBODIMENTS**

A water pipe bong 10 in the preferred embodiment of the invention is constructed to rest in an upright disposition on its base 12. The bong 10 is divided into an upper, inhalation and water chamber 14, partially filled with water or other cooling liquid 16, the lower level of which is best seen in FIG. 14, is defined by a plate 22 at the lower end of the chamber 14, the upper level of which is indicated at 18, a primary smoke cooling chamber 20 beneath chamber 14 and divided therefrom by said plate 22 and a lower ash and contaminant trap 24, divided from chamber 20 by a perforated spacer plate 26 (FIGS. 1 and 6). The substance to be burned is placed in a bowl 28, mounted on a forward portion of the upper dividing plate 22, and fumes (combustion products) are conveyed to trap 24 by primary tubing 30, bifurcated at 32 beneath bowl 28, extending through plate 26 for structural integrity and terminating at the interior of the sidewall of trap 24, preferably flush therewith to ease cleaning of the trap as well as to provide an aesthetically pleasing structure. Ashes and other contaminants drawn from the burning substance in bowl 28, by reason of the smoker's inhalation on the mouthpiece end 34 of inhalation and water chamber 14, will remain in trap 24 while smoke passes upwardly through perforated spacer plate 26 into the primary smoke cooling chamber 20. Thereafter, smoke passes through secondary tubing 36a and 36b into a body of cooling water 16 located in the lower portion of chamber 14. As a result of low pressure created above the water level, the smoke is drawn out of the lower ends of tubes 36a and 36b, bubbling up through and cooled by the water before passing into the upper portion of tube 14 and thence to the mouth and lungs of the smoker via mouthpiece end 34.

Tube 36a extends only partially downwardly into cooling water 16 while tube 36b terminates near the bottom of chamber 14 as most clearly shown in FIG. 5. The reason for such structure is that, during initial, slow draw on the bong, only tube 36a is operative due to the water pressure differential levels between the lower ends of tubes 36a and 36b so that air is drawn very slowly through the substance burning in bowl 28. During this slow draw time, chamber 20 and then chamber 14 above water level 18 will gradually fill with water cooled smoke. As combustion of the substance nearly or completely terminates in the bowl 28, which will be observed by the smoker, the slow inhalation may be changed to a hard draw by the smoker's lungs and diaphragm so that ash and contaminants are sucked from bowl 28 into trap 24. Simultaneously, the hard draw on mouthpiece end 34 will cause both tubes 36a and 36b to become operative so that clean air is drawn in from the now empty bowl 28 behind the smoke present in chambers 20 and 14 and the smoker then draws all smoke into his lungs by visually observing the disappearance of smoke from chambers 20 and 14.

By having trap 24 located beneath water chamber 14, and by providing chamber 20 and tubing 36a and 36b, a tortuous path of travel for smoke is provided by simplified structure to partially cool the smoke before it ever enters water 16. But more importantly, the disclosed structure virtually eliminates any possibility of ash and solid contaminants from trap 24 entering water 16, due primarily to the force of gravity retaining ash and solid contaminants in trap 24. Thus, the water or other cooling liquid 16 will remain clean and clear even after repeated uses of the bong, thereby avoiding the necessity of changing the water 16 repeatedly, as is a common nuisance with prior art bongs wherein smoke is drawn directly into the cooling water from the bowl or, wherein when an ash trap is provided, it is located above the water and will periodically overflow or leak into the cooling water.

Preferably, all components of bong 10 are made of a suitable, durable synthetic material such as Plexiglas. Of course, Plexiglas is a trademark for an acrylic resin or plastic, more particularly a glasslike thermoplastic made by polymerizing acrylic or methacrylic acid or a derivative of either, especially an ester (as methyl methacrylate). Chambers 14 and 20 and trap 24 are made of individual tubular sections of clear, cast Plexiglas of like diameter joined to plates 22 and 26 and base 12 by suitable cement. Cast Plexiglas is preferred to extruded Plexiglas to avoid crazing and cracking of the tubular sections, particularly where tubes 36a and 36b extend outwardly from smoke chamber 20. For the sake of aesthetics, tubes 30, 36a and 36b may be col-
ored Plexiglas and one or more of plates 22, 26 and base 12 may be clear or opaque.

Referring now to FIGS. 2, 3 and 4, bowl 28 is shown having a depending threaded end 38 retained in a shell 40 of refractory or other heat insulating material to preserve the integrity and prevent melting of plate 22 in which it is mounted. Shell 40 may terminate at plate 22 (FIG. 3) or, if a more rigid structure is deemed necessary, may extend beneath plate 22 as shown at 42 in FIG. 4 to secure bowl 28, plate 22 and tubes 30 together as an integral unit. The threading of end 38 of bowl 28 assures firm interengagement of bowl 28 with material 40 but, alternatively, end 38 may be externally plain or smooth (not shown).

Additionally, the interior side wall 44 of bowl 28 has a gradual taper which provides a steep-sided smooth, concave curvature, frusto-conical configuration, terminating in an orifice 46 about one-eighth inch in diameter for a significant reason. Prior art bowls have a rather flat and shallow internal surface so that over a period of repeated use, contaminants tend to build up in the bowl or even jam the orifice leading to the inhalation tubes. Thus, prior art bowls must be constantly cleaned. However, bowl 28 of this invention with its steep side walls not only seems to permit complete combustion of the substance being burned therein but also allows residue and ash from combustion to be completely drawn from the bowl in that the high angled side wall 44 presents a minimal friction drag surface tending to retain combustion by-products and substantially reduces caking of by-products on wall 44. Additionally, the one-eighth inch diameter of orifice 46 is both small enough to retain the substance in the bowl during combustion yet large enough to permit combustion by-products and any unburned contaminants in the substance being burned to be easily withdrawn from the bowl, down tubes 30 to trap 24.

Mouthpiece end 34 is clearly illustrated in FIGS. 1 and in the detail views, FIGS. 7 and 8. Mouthpiece end 34 is gently contoured and rounded as shown to provide a surface to fit comfortably the portions of the face about the mouth of the smoker as well as to assure a leakproof, tight seal between mouthpiece end 34 and the mouth of the smoker.

The base 12 of bong 10 may be provided with a removable plug 48 to facilitate cleaning of ash and contaminant trap 24. Incidentally, it has been found that these combustion products include unburnt material than can be resmoked, so the provision of plug 48 permits both cleaning of the bong and reuse of the deposits in trap 24. In the embodiment shown in FIGS. 9 and 10, plug 48 is a resilient plastic or nylon plug, having a friction fit into a mating opening 50 in base 12, and easily removed and replaced by provision of a grasping tab 52 formed in the recessed undersurface 54 of plug 48.

An alternative plug 56 is shown in FIGS. 11 and 12, having retention keys 58 fitted through vertical, mating slots 60 terminating in an open circular keyway 62. A seal 64 may be inserted in keyway 62 to provide a fluid tight seal between base 12 and plug 56. Plug 56 is inserted as shown in FIG. 11 with keys 58 inserted into slots 60, and then rotated a quarter turn by grasping plug tab 66 to lock plug 56 in place.

As discussed above, chambers 14 and 20 and trap 24 may be cemented where appropriate to plates 22 and 26 and base 12. A more sturdy form of construction is disclosed in FIG. 16 wherein a recess 68 is provided in base 12 to receive the mating lower circumferential portion of trap 24, whereafter the pieces are cemented together. If desired, a similar form of construction may be provided for joiner of chambers 14 and 20 to plate 22 and joiner of chamber 20 and trap 24 to perforated plate 26 (not shown).

A significant feature in the construction of water chamber and inhalation pipe 14 is a rearward bend 70 formed medially therein. The bend is provided so that, during smoking, fumes from the substance burning in bowl 28 are directed upwardly but away from the eyes and face of the smoker.

Other embodiments of bong 10 are disclosed in FIGS. 13, 14 and 15. In FIG. 13, the bong 10 is similar to the bong shown in FIG. 1 except that plate 26 has been eliminated so that a single combined primary smoke cooling and ash and contaminant chamber 72 is located beneath plate 22. In FIG. 14, tubes 36a and 36b are formed internally of the bong rather than externally as in previous embodiments to prevent the possibility of breakage. In FIG. 15, four tubes 36a, 36b, 36c and 36d are provided for directing smoke from smoke chamber 20 to water 16 in chamber 14 and each terminates within chamber 14 at progressively deeper levels so that only two or three operate during initial, slow draw on the bong whereas all four tubes become operative at the end of the smoke, during the hard draw hereinafter explained.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is:

1. A water pipe or bong comprising: an inhalation and water chamber; a base chamber comprising ash and solid matter contaminant trap means and including top, divider plate means for separating said base chamber from said inhalation and water chamber, a bottom wall and sidewall means connecting said divider plate means and said bottom wall to complete said chamber; an inhalation and water chamber mounted on said base chamber; a bowl for burning a substance to be smoked; primary fluid communication means for directing combustion products including smoke from said bowl to said trap through said sidewall means; and secondary fluid communication means for directing smoke substantially free of ash and solid matter contaminants from said trap to said inhalation and water chamber; said primary and secondary fluid communication means being in indirect registry with each other in said trap; whereby during use of the bong, said trap, substantially by virtue of gravity forces, collects such solid matter passing from said bowl through said primary fluid communication means thereby substantially preventing matter other than smoke from passing to water in said inhalation and water chamber.

2. The bong as recited in claim 1, wherein said inhalation and water chamber further comprises means forming a contoured mouthpiece end thereon, conforming to the shape of the portions of the face about the mouth of the smoker whereby a tight seal between
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the smoker's mouth and said inhalation and water chamber is assured.
3. The bong as recited in claim 1, wherein said bowl is located adjacent the lower end of said inhalation and water chamber and said inhalation and water chamber is bent mesially thereof, rearwardly away from said bowl whereby fumes from a substance burning in said bowl will be directed upwardly and away from the face of the smoker.
4. The bong as recited in claim 1, wherein means are provided for mounting said bowl on said divider plate means.
5. The bong as recited in claim 4, wherein said means for mounting said bowl on said divider plate means comprise refractory material for heat insulating said bowl from said divider plate means and the remainder of said bong.
6. The bong as recited in claim 5, wherein both said bowl and an end of said primary smoke directing means are mounted to said divider plate means by said refractory material.
7. The bong as recited in claim 6, wherein said refractory material extends above and below said divider plate means, and surrounds the lower end of said bowl and one end of said primary smoke directing means.
8. The bong as recited in claim 4, wherein said bowl includes an externally threaded lower end for firm engagement with said means for mounting said bowl on said divider plate means.
9. The bong as recited in claim 1, wherein said bowl further comprises means defining steep sided interior sidewall tapering downwardly into a smoke passage orifice whereby combustion by-products from a substance burning in the bowl tend to readily flow from said bowl into said trap without adhering to said side wall upon a sharp inhalation by the smoker and whereby caking of burnt substance on said sidewalls is minimized.
10. The bong as recited in claim 1, including a base on said bong, a portion of said base defining said bottom wall of said trap means.
11. The bong as recited in claim 10, wherein said bottom wall of said trap means further comprises means defining an opening therein and a removable plug releasably disposed in said opening to facilitate periodic cleaning of accumulated ash and contaminates from said trap means.
12. The bong as recited in claim 11, wherein said plug is made from a resilient plastic material and includes a tab enabling manual insertion and removal of said plug.
13. The bong as recited in claim 11, wherein said bottom opening means includes means providing a circumferential recess medially thereof and a pair of opposed keyways extending downwardly therefrom, said plug having opposed keys matically insertable into said keyways and received in said recess means upon rotation of said plug to thereby retain said plug in said opening.
14. The bong as recited in claim 1, wherein said primary smoke directing means comprise a pair of tubing means joined at one end, said one end communicating with said bowl and the other ends of said tubing means extending into said trap means.
15. The bong as recited in claim 1, wherein said secondary smoke directing means comprise at least a pair of tubes each extending outwardly of said trap means and upwardly and inwardly through the side of said inhalation and water chamber, above a predetermined level of water to be contained in said inhalation and water chamber, said tubes having terminal, open ends extending downwardly into the water chamber portion of said inhalation and water chamber.
16. The bong as recited in claim 15, wherein said tube terminal open ends are respectively disposed at different vertical levels within said water chamber whereby during operating conditions only a portion of said secondary smoke directing means is operative to convey smoke to the water and inhalation portion of the inhalation and water chamber during an easy draw by the smoker and all said secondary smoke directing tubes are operative to convey smoke during a hard or sharp draw by the smoker, due to the differential in water pressure at said tube terminal ends.
17. The bong as recited in claim 16, and including at least four of said secondary smoke directing tubes, the terminal open ends of at least two of said tubes thereof each terminating at different levels in the water chamber portion of said smoke and inhalation chamber.
18. The bong as recited in claim 15, wherein said secondary smoke directing tubes extend from said trap upwardly through the base of said inhalation and water chamber to a point above the level of water therein, said secondary smoke directing tubes each having an end portion directed downwardly into the water chamber portion of said inhalation and water chamber.
19. The bong as recited in claim 18, wherein said secondary smoke directing tube terminal ends terminate at different vertical levels within said water chamber whereby only a portion of said secondary smoke directing means is operative to convey smoke during an easy draw by the smoker and all of said secondary smoke directing tubes are operative to convey smoke during a hard draw by the smoker due to the differential in water pressure at said different vertical levels.
20. The bong as recited in claim 1, wherein the major portions of said water and inhalation chamber and said ash and contaminant trap comprise tubes of substantially similar diameter.
21. The bong as recited in claim 20, wherein said tubes are made of an acrylic plastic.
22. The bong as recited in claim 20, wherein said tubes are made of a cast acrylic plastic.
23. The bong as recited in claim 20, wherein said ash and contaminant trap further comprises a perforated plate dividing said trap means into a trap portion and a primary smoke cooling chamber.
24. The bong as recited in claim 23, wherein said primary smoke directing means terminates in said trap portion and said secondary smoke directing means is constructed to convey smoke from said primary smoke cooling chamber to said inhalation and water chamber.
25. The bong as recited in claim 23, wherein said perforated plate includes a forward extension having means therein for mounting a portion of said primary smoke directing means through said extension.
26. The bong as recited in claim 23, and further comprising a base on said bong.
27. The bong as recited in claim 26, wherein the upper face of said base further comprises means defining a recess therein for receiving the lower circumferential edge of said tube comprising said trap portion.
* * * * *
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,881,499
DATED : May 6, 1975
INVENTOR(S) : Michael Duncan McFadden, Peter Robin Barnhard

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

Column 3, line 31, after "partial" insert --plan--.
Column 6, line 47, claim 1, change "an" to --said--;
before "mounted" insert --being-- per Rule 312 Amendment filed January 24, 1975.
Column 7, line 35, claim 9, after "said" change
"side wall" to --sidewall--.
Column 7, line 29, claim 9, after "said" change
"sidewalls" to --sidewall--.
Column 7, line 63, claim 15, after "recited" change
"inn" to --in--.

Signed and Sealed this
fifth Day of August 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

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