Dec. 31, 1940. H. E. CHRISTIE 2,226,707

SMOKER'S PIPE

Filed April 23, 1935

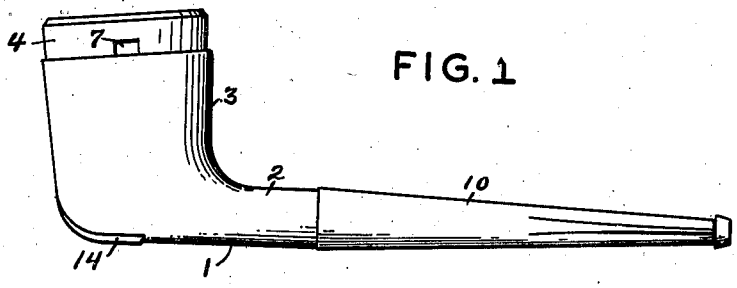


FIG. 1

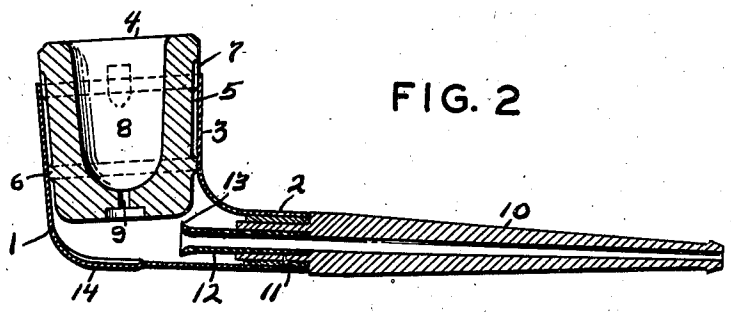


FIG. 2

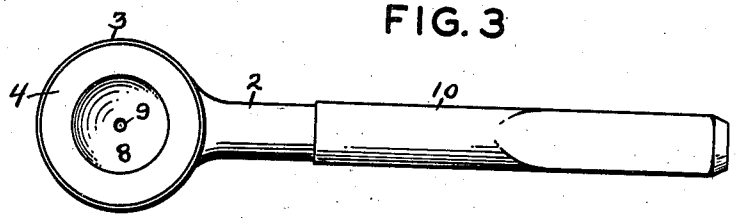


FIG. 3

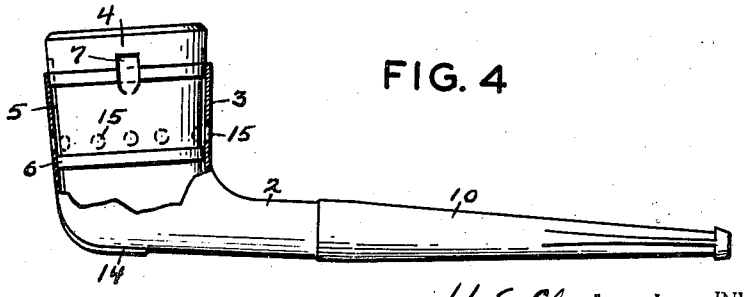


FIG. 4

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2,226,707

SMOKER'S PIPE

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2 Claims. (Cl. 131—196)

This invention relates to pipes for smoking tobacco and the like.

The main object of the invention is to provide a pipe which shall insure that the smoke drawn into the mouth of the smoker shall be of desired quality both as to temperature and humidity and wherein the drawing of objectionable accumulations in the pipe into the mouth of the smoker shall be avoided.

A further object of the invention is to provide an improved pipe which is easily cleaned.

A further object of the invention is to provide a pipe the smoke from which shall be substantially free from the usual rank taste and odor which comes from "wet heel" in pipes.

A further object of the invention is to provide a light weight pipe in comparison to its size.

A further object of the invention is to provide a pipe having a bowl for containing tobacco or other material to be smoked and a metal casing therefor including a metal stem. By this means the tobacco containing bowl may be made of otherwise desired materials but which are not mechanically strong, the bowl being re-inforced and supported by the metal casing and also the metal being a good heat conductor cools the smoke and further provides a surface which can be readily cleaned of the inevitable accumulations within a pipe.

A further object of the invention is to provide a pipe having a bowl encased in a metal casing having a metal bowl portion and a metal stem portion which casing is formed by electro-deposition whereby a very light, flexible and strong structure is produced.

A further object of the invention is to provide a pipe bowl and a metal casing therefor which are of different co-efficients of expansion, the metal having a greater co-efficient than the bowl whereby, when the pipe is out of use the metal casing will shrink more tightly upon the bowl and prevent the bowl from falling out of the casing when the pipe is in the pocket or elsewhere.

A further object of the invention is to provide a metal cased bowl of light material, highly moisture absorbent and a good heat insulator.

A further object of the invention is to treat the light porous bowl upon its interior to prevent undue absorption of the moisture of the tobacco by the bowl, other portions of the surface of the bowl being exposed to absorb any surplus moisture collecting in the pipe, this absorbed moisture being evaporated to the atmosphere at the exterior of the bowl whereby excess moisture is eliminated from the smoke but still enough is retained in the smoke to make it pleasing and avoid the hot dry smoke which is obtained when too much of the moisture is removed from the smoke.

A further object of the invention is to provide a moisture absorbent bowl removably secured in a metal casing from which it may be removed when it has been charged with moisture, heated to drive off the moisture and returned to the casing. A number of different bowls might be alternately used in the metal casing.

A further object of the invention is the provision of a pipe having a metal tube fixed in the stem and having a free flared end into which the smoke enters on its way to the mouth of the smoker.

A further object of the invention is to provide a pipe in which the entire charge of tobacco may be smoked, there being no wet or unburned tobacco at the bottom of the bowl.

A further object of the invention is to provide a pipe wherein the kindling temperature of the tobacco is maintained and yet the smoke on the way to the smoker's mouth is subjected to cooling so that a "cool" smoke is obtained.

Other and ancillary objects of the invention will appear hereinafter.

In the accompanying drawing which illustrates the invention:

Fig. 1 is a side elevation of a pipe embodying the invention.

Fig. 2 is a longitudinal central section of the pipe shown in Fig. 1.

Fig. 3 is a top plan view of the pipe shown in Fig. 1, and

Fig. 4 is a view partly in section and partly in side elevation of a modified construction of pipe.

Referring to the drawing, and first to Figs. 1 to 3 inclusive, the metal casing 1 comprises the stem portion 2 and the bowl portion 3 having the interior tapered, an auxiliary bowl 4 having a generally tapered configuration fitting tightly within the bowl portion 3 when pressed therein and being retained by friction. The metal casing or portion 1 is very thin so as to be flexible and readily adapt itself to a tight joint with the bowl 4 and be made of any suitable metal such as copper, aluminum, iron or the like but is preferably made by electro-deposition of a suitable metal upon a suitably formed electrode. By this last mentioned process a very thin flexible wall may be readily produced.

The bowl 4 is made of any suitable substance having relatively high heat insulation and poros-

ity (giving great capacity for moisture absorption). This would ordinarily be a clay of the desired properties and may advantageously be of the clay known as kieselguhr. In the outer wall of the bowl 4 is formed a circumferential groove or channel 5 with the bead 6 at its bottom and vents 7 at its top. When the auxiliary bowl 4 is placed within the bowl portion 3 and pushed home, its position will be as shown in Fig. 2 from which it will be observed that the bottom of the bowl 4 is spaced from the bottom of the metal casing 1 and that the channel 5 forms a chamber between the metal wall of the bowl portion 3 and the outer wall of the bowl 4, which chamber is in communication through the vents 7, with the atmosphere. The bead 6 is circumferentially continuous and forms a tight seal with the bowl portion 3 so that the chamber 5 is cut off from the interior of the pipe except for such communication as may be established through the ports of the material of the bowl 4. The bottom of the interior or fire chamber 8 of the bowl 4 has an opening 9 through which the fire chamber communicates with the interior of the metal stem portion 2 which in turn communicates with the usual mouth piece 10 telescoped within the stem portion 2, the joint being rendered tight by means of a cylindrical packing sleeve 11 of cork or other suitable material. Fixed in the mouth piece is a metal tube 12 having a flared end 13 which extends beyond the mouth piece and is spaced from the metal pipe casing.

The kieselguhr is friable and physically weak but it is protected from injury by the metal casing 1 and the lightness porosity and heat insulation of the kieselguhr are availed of. The mouth piece may be of hard rubber, amber, Celluloid or other suitable material.

In order to prevent the wall of the fire chamber from absorbing moisture from the smoke and tobacco within the fire chamber, whereby too much moisture might be abstracted and the smoke rendered too dry to be pleasant, the wall of the fire chamber, that is the inside of the bowl, is provided with a coating or layer of material rendering it moisture proof. This moisture proof layer may be formed by applying a mixture of 100 parts by weight of honey and 50 parts by weight of kaolin or any other fine clay, this mixture being brushed on and the bowl then baked in an oven for a half hour at a temperature of 450° F. This treatment fills the pores of the bowl and hardens the surface which prevents moisture passing through the walls of the fire chamber into the kieselguhr.

As before stated the kieselguhr of which the auxiliary bowl is formed is physically weak and friable. To strengthen and harden parts of the kieselguhr bowl which are exposed to wear as for instance the bead 6, other parts of the kieselguhr bowl which contact with the metal casing 1, and such other parts of the bowl as may be desired, such parts may be treated by brushing on two coats of sodium silicate solution, 20° Baumé, which are allowed to dry for about three hours in the air. The bowl is then baked in an oven at a temperature of 450° F. for half an hour. The parts may then be brushed over with a weak solution of boric acid. This causes the silicate to be insoluble in water.

It will now appear that the tobacco within the kieselguhr bowl 4 will burn and the smoke be drawn through the hole 9 of the bowl into the space within the metal casing which is beneath such bowl, will then pass through the metal tube 12 and the mouth piece into the mouth. It will be apparent that all condensate and other moisture will settle into the metal casing below the space so that the tobacco will be dry and smokable from top to bottom without any wet portions at the bottom.

On account of the moisture proof coating or layer upon the interior of the kieselguhr bowl, such bowl can not abstract or absorb moisture but any excessive moisture will pass down through the hole 9 into the lower compartment enclosed by the metal casing and the outer portions of the kieselguhr bowl and the latter having their surfaces untreated and moisture absorbent, any moisture finding its way into the metal casing below the bowl will be absorbed and pass through the pores of the kieselguhr to the air chamber 5 where it will pass to the air and be conveyed outwardly through the opening 7 into the atmosphere. The tube 12 projecting from the mouth piece will prevent any condensate or accumulation from passing into the mouth piece and thereby into the mouth of the smoker, while the flared end of the tube prevents any condensate from passing from the outside of the tube around the end thereof and thence into the mouth piece.

With the pipe as thus described the metal casing is non-absorbent and readily cleaned, and it is merely necessary, in order to clean the pipe of the inevitable accumulations, to withdraw the bowl 4 from the casing (the mouth piece may also be withdrawn if desired) when the accumulations can be readily removed. The absorption of the excess moisture through the kieselguhr and its dissipation in the air chamber 5 prevents too great humidity or moisture in the smoke and the metal stem portion of the casing through which the smoke passes serves to cool the smoke so that the smoker enjoys a cool smoke which is not too humid and not too dry and it is impossible for any "slugs" or objectionable foreign matter to reach the mouth of the smoker. Furthermore, if the kieselguhr bowl should become too charged with moisture it may readily be removed and dried out by suitably heating it.

The bowl 4 being heat insulating, a high temperature, above the kindling temperature of the tobacco may be maintained within it, whereby the fire is kept from going out and the necessity of frequent lightings is avoided. Also, although the strengthening case is of metal, it is heat insulated from the fire and so is of a sufficiently low temperature to permit of grasping by the hand without discomfort.

A raised flattened portion 14 may be provided on the casing so that the pipe will stand in an upright position on a flat surface.

Referring now to Fig. 4 the circulation of air in the chamber 5 is caused to be promoted and the dissipation of the moisture facilitated by providing holes 15 in the metal casing near the bottom of the chamber 5, the cool outer air entering through the holes 15, and becoming heated by contact with the bowl, rises and passes out through the openings 7. The construction of the pipe of Fig. 4, except for the holes 15, is identical with that of Figs. 1 to 3 inclusive.

While the invention has been illustrated in what are considered its best applications, it may be embodied in other structures without departing from its spirit and is not therefor limited to the structures shown in the drawing.

What I claim is:

1. In a smoker's pipe, the combination of a

pipe casing and a pipe bowl, said casing comprising a bowl portion adapted to receive said bowl and a stem portion adapted for maintaining the stem of the pipe, the material of one of said portions being integral with that of the other of said portions and comprising thin and resilient sheet metal, having the same thickness throughout, whereby said bowl portion can be made to yield against pressure, said bowl portion and said bowl being tapered to a degree, whereby a pressure by said bowl against said bowl portion will cause said bowl to firmly adhere to the inner surface of said portion under the frictional contact caused by the pressure of the resilient material of said casing, said pipe bowl comprising a material of clay having an artificially hardened outer surface, to reduce the wear and having a circumferential channel on its outer surface, said bowl having vents leading from the outside toward said circumferential channel, for providing circulation of air between said channel and the atmosphere.

2. In a smoker's pipe, the combination of a pipe casing and a pipe bowl, said casing comprising a bowl portion adapted to receive said bowl and a stem portion adapted for maintaining the stem of the pipe, the material of one of said portions being integral with that of the other portions and comprising thin and resilient sheet metal, whereby said bowl portion can be made to yield against pressure, said bowl portion and said bowl being tapered to a degree, whereby a pressure by said bowl against said bowl portion will cause said bowl to firmly adhere to the inner surface of said portion under the frictional contact caused by the pressure of the resilient material of said casing, said pipe bowl comprising a material of clay having an artificially hardened outer surface, to reduce wear, said hardened outer surface having beads to provide a channel whereby to reduce area contacting with the inner surface of said pipe casing said pipe bowl having a circumferential channel on its outer surface and a vent or vents on the upper outer surface portion for communicating said channel with the atmosphere, said metal portions having perforations leading from the outside toward said circumferential channel for providing circulation of air between said bowl and the atmosphere.

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