April 10, 1945. J. A. DONNELLY 2,373,296

SMOKING PIPE AND METHOD OF MAKING SAME

Filed Aug. 25, 1943

Fig. 1.

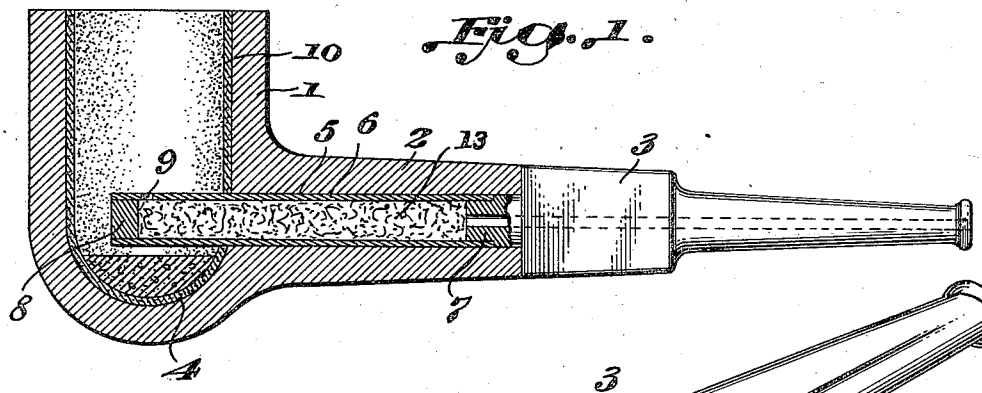


Fig. 2.

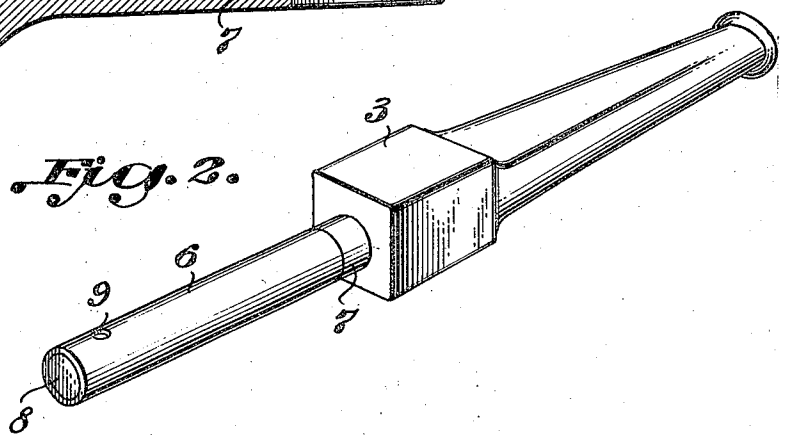


Fig. 3.

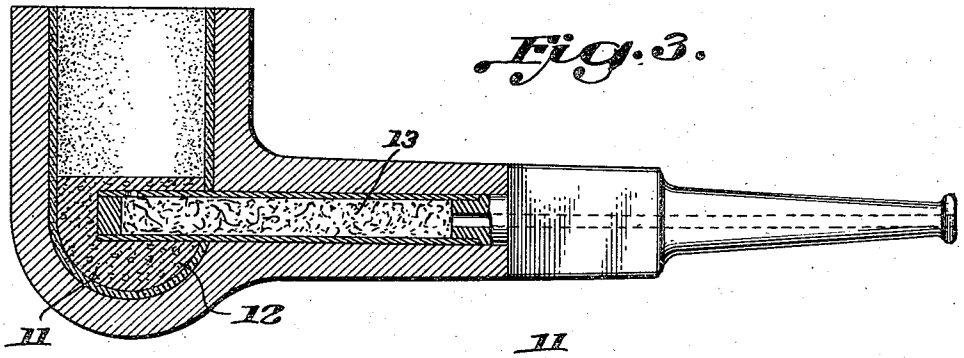
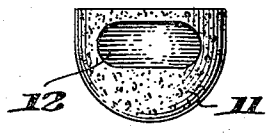


Fig. 4.



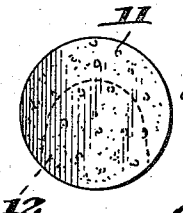


Fig. 5.

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SMOKING PIPE AND METHOD OF MAKING SAME

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9 Claims. (Cl. 131—207)

This invention relates to an improved smoking pipe and a method of making the same.

The invention has for one of its objects the provision of a pipe structure which will improve the combustion of tobacco and conduct such combustion more in conformity with natural laws than has heretofore been done, so as to produce a more agreeable and beneficial result when used by a smoker.

A further object of the invention is the provision of a preconditioned structure which will obviate the necessity of the usual breaking-in process and which will remain sweet and clean and substantially free of the usually obnoxious moisture conditions which ordinarily obtain.

Another object of the invention is the provision of a pipe which in its original condition and throughout its period of use will substantially adsorb the poisonous gases and nicotine attendant in the process of smoking tobacco, and which will require little cleaning.

Other objects of the invention include the production of a pipe having a composite lining of highly refractory, non-absorbent material of high density and hardness, and one having combined therewith activated carbon of tobacco.

The foregoing and other objects of the invention are accomplished by a pipe constructed by a method in which the pipe bowl is lined with a highly refractory lining of carborundum or the like and has also therein activated carbon of tobacco. The structure and method will be more clearly understood from the following detailed description of the invention and by reference to the drawing forming a part of the specification, wherein—

Figure 1 is a longitudinal cross sectional view showing one embodiment of the invention.

Fig. 2 is a detail view of the stem and adsorbing filter removed from the pipe.

Fig. 3 is a longitudinal section of a modified form of pipe in accordance with the invention.

Fig. 4 is a detail view in rear elevation of the removable carbon element of Fig. 3.

Fig. 5 is a top plan view of the element of Fig. 4 with the stem and filter receiving recess shown in dotted lines.

Having reference to the drawing, 1 designates the bowl of the pipe provided with the usual stummel portion 2 for receiving the usual stem or bit 3. The bowl is usually bored to provide a chamber or recess 4 in the bottom of the pipe below the vent 5 through the stummel portion adapted to receive and retain therein a small quantity of carbonized tobacco.

The stummel and stem of the pipe are so constructed and designed as to give the utmost protection to the smoker against poisonous gases and the normally disagreeable accumulation of moisture and, in conjunction with the bowl construction, effectively eliminates highly disagreeable tastes and odors. The bore or vent through the stummel is enlarged in comparison with ordinary pipe construction to receive a non-corrosive metal tube 6 of large diameter detachably mounted at one end on a reduced end portion 7 of the stem. The other end of the tube extends into the bowl of the pipe preferably past the vertical axis of the bowl boring and carries at its free end a solid mass metal insert 8 which is adapted to store heat for a purpose presently to be described. The tube is closed except for a smoke aperture 9 adjacent the metal insert, and carries therewithin a charge of carbonized tobacco 13 or other activated carbon. The smoke receiving aperture in the normal assembly of the parts falls substantially in the center of the bowl. By turning the stem 180°, the smoke receiving aperture may function at different levels in the bowl to vary the heating of the tube and the fixed activated carbon in the pipe.

In making the pipe, the bowl is provided with a bore which will define the recess below the side smoke vent, and the stummel portion is provided with an enlarged bore which intersects the bore of the bowl. The bowl is then lined with a highly refractory, non-absorbent material 10 of high density and hardness such as carborundum. The carborundum with a suitable binder is applied to the bowl in a moist plastic condition and while in such condition and before setting there is embedded in the surface of the liner at the bottom of the bowl a covering of relatively coarse pieces of carbonized tobacco, and on the inside surface of the upper part of the bowl there is applied a thin coating of carbonized dust of tobacco. This treatment or preconditioning of the bowl provides a condition of the pipe best suited to proper smoking from the very start of the use of a new pipe so as to obviate the necessity of the usual disagreeable breaking-in process.

The carborundum lining protects the briar of the pipe, maintains proper size of bore in cleaning operations, and provides combustion aid and more even distribution of fire. The activated carbon of tobacco contributes its additional adsorptive characteristics for treatment and elimi-

vides a natural and pleasant smoking condition. When the pipe is smoked, the fixed carbon forms a bed or base for other carbonized tobacco and, by its heat retentive characteristic, aids in maintaining even combustion and the driving off of certain volatiles from the fresh tobacco.

Referring to Figs. 3 to 5 inclusive of the drawing wherein there is illustrated another embodiment of the invention, the bowl, stummel, stem and tubular attachment are made in the same manner and by the same method as hereinbefore described, except that in lieu of embedding in the bottom of the bowl fixed coarse portions of activated carbon, there is employed a detachable insert 11. The insert is formed preferably of activated carbon of tobacco and is made as a replaceable unit in such manner as to closely fit the inner lining of the bowl. The insert as more particularly shown in Figs. 4 and 5 has a spherical surface to correspond with the bowl lining and a flat upper surface which constitutes the bottom of the bowl with respect to the smoking charge when the insert is in position. The insert or detachable unit is a porous structure constructed by molding in the presence of a binder particles of activated carbon. It is so characterized that smoke and gases may pass from the tobacco in the bowl through the insert to the tubular member and the stem of the pipe. The insert is further characterized by a lateral recess or depression 12 which extends transversely of the unit to receive therein the metal tube which extends from the stem through the stummel into the bowl of the pipe. The end of this metal tube extends to substantially a central portion of the bowl and into the lateral recess of the unit. It will be seen by this construction that by removing the stem and its tubular attachment the bowl insert may be freed for removal from the bowl and for the substitution of a new insert. The insert is intended as a replaceable unit so that renewal is possible at the will of a user.

The gases from the tobacco have dual treatment in the insert and the tubular attachment of the stem. The material being activated carbon, it is influenced by the heat incident to smoking so that it is subject to reactivation and to drying so as to preclude the accumulation of moisture.

In the structures hereinbefore described combustion is aided by the presence of the activated carbon and carborundum lining of the bowl. This gives even distribution of fire around the bowl and avoids side lighting which is such a common defect in some pipe constructions. It is unnecessary to set forth the theory but it has been found that pipe structures made as hereinbefore described remain substantially free of disturbing moisture collections and obnoxious odors.

The structures illustrated and described constitute distinct advances in the art and the advantages therein are true in all general uses with all forms of smoking tobacco. While not forming a part of this invention, it has been found that the utmost advantage, and that of an added nature, is obtained by the use of a tobacco mixture consisting of ordinary tobacco and a predetermined percentage of carbonized tobacco. The carbonized tobacco assists in maintaining combustion and in driving off the volatiles from the uncarbonized tobacco. Furthermore, it appears to have a peculiar cooperation with the pipe structures described in that easier lighting is obtained and combustion is more easily sustained.

It will be obvious to those skilled in the art that the removable insert is calculated to be one of several designs dependent upon the shape and contour of the bowl structures with which it is employed. It is to be noted that when the insert is in position in the bottom of the bowl the side recess therein is placed in registry with the bore through the stummel so that when the stem and its attached tubular extension is inserted through the stummel the end of the tubular attachment provides a locking engagement with the insert so that it cannot be dislodged from its position in the bottom of the bowl.

The invention has been described in connection with preferred embodiments thereof but the words used in setting forth the illustrations are to be considered as words of description and not those of limitations, and the invention contemplates all improvements within the scope of the appended claims.

I claim:

1. A smoking pipe of the character described comprising a main body portion having a bowl and a transverse stem aperture substantially the same diameter throughout its length, the bottom of said bowl defining a substantial recess below the stem aperture, a lining of carborundum coated with activated carbon of tobacco molded in said bowl, a stem frictionally engaged in the stem aperture, and an activated carbon filter on said stem extending into the bowl of the pipe for conducting and treating gases passing through the stem.

2. In a smoking pipe of the character described, a main body portion having a bowl and a communicating stem bore of even diameter throughout its length, said bowl having a substantial recess below the stem bore, a non-absorbent refractory lining of high density and hardness having a surface coating of activated carbon of tobacco, an activated carbon deposit in the bottom of the bowl, a stem frictionally engaged within the stem bore, and a non-corrosive tubular filter member containing activated carbon detachably mounted at one end on said stem and having its other end apertured and extending into the bowl.

3. A pipe as defined in claim 2 characterized by having a solid metal heat retentive member at the bowl end of the tubular filter member.

4. In a smoking pipe of the character described, a main body portion having a transverse stem bore of even diameter throughout its length to receive a stem and filter assembly, a stem having a portion fitting within said bore and a forwardly extending reduced annular portion, a tubular filter attachment detachably mounted at one end on the reduced portion of the stem and extending through the stem bore and transversely of the bowl of the pipe, a charge of activated carbon within the attachment for contacting gases passing to the stem of the pipe, and a removable porous activated carbon insert positioned in the bottom of the bowl in locking engagement with the tubular extension from the stem.

5. A pipe structure as defined in claim 1 characterized by having a fixed deposit of activated carbon of tobacco in the bottom of the bowl below the stem aperture.

6. A smoke filtering pipe bowl insert of the character described, comprising a molded porous body of activated carbon and a binder adapted

to fit the bottom of the bowl of a pipe and having a transverse recess in the side thereof for gases passing through the insert and for locking engagement with a portion of the pipe.

7. A molded porous pipe bowl insert of activated carbon and a binder, said insert being of sufficient thickness to extend above the stem bore of a pipe and having a side smoke conducting recess therein to receive a locking extension from the stem of a pipe and being further characterized by having one surface thereof contoured to fit the bottom of a pipe bowl and another surface thereof adapted to define the bottom of a pipe bowl above the stem bore when the insert is in position in the pipe.

8. The method of making a smoking pipe which comprises providing the bowl portion of the pipe with a relatively large transverse stem bore of even diameter throughout its length, providing a substantial recess in the bottom of the bowl below said transverse bore, forming on the interior of the bowl of the pipe a carborundum lining coated with activated carbon of tobacco, and embedding in the bottom of the bowl of the pipe a fixed amount of coarse particles of activated carbon of tobacco.

9. In a pipe of the character described, a main body or bowl portion having a non-absorbent dense lining of carbonaceous material with an inner coating of activated carbon of tobacco, a stem and filter attachment detachably associated with the bowl portion and communicating therewith, said filter attachment comprising a non-corrosive metal tubular element containing activated carbon the inner end of said attachment being adapted to extend for a substantial distance into the bowl of the pipe, and a molded bowl insert of porous activated carbon in the bottom of the bowl in locking engagement with the filter attachment, said insert being removable from the bowl on removal of the stem and filter attachment.

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