Nov. 14, 1967 A. A. KAUL 3,352,309

SANITARY SMOKING PIPE

Filed Dec. 14, 1964

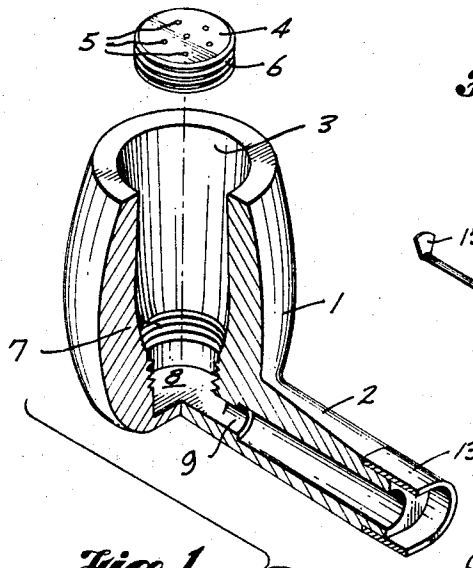


Fig. 1.

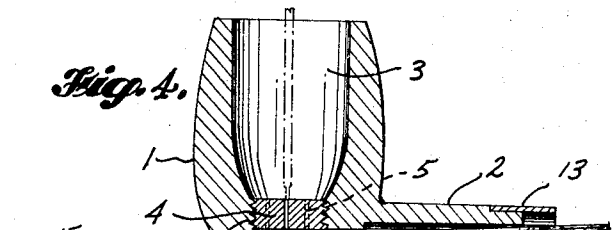
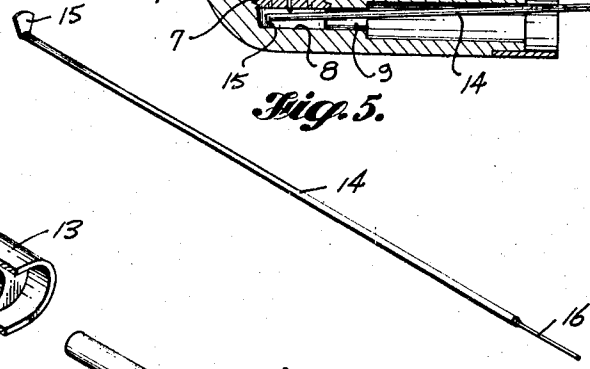
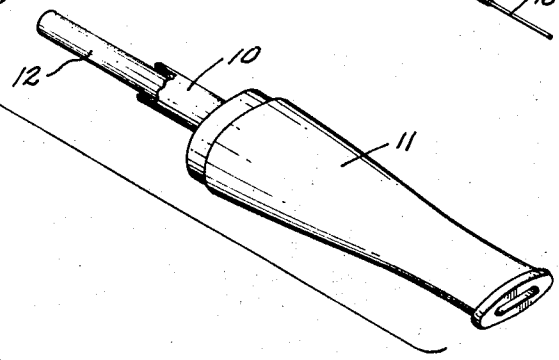


Fig. 4.

Fig. 5.





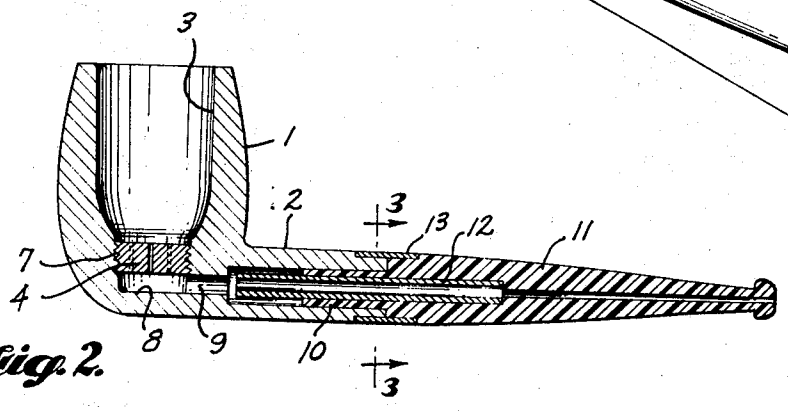


Fig. 2.

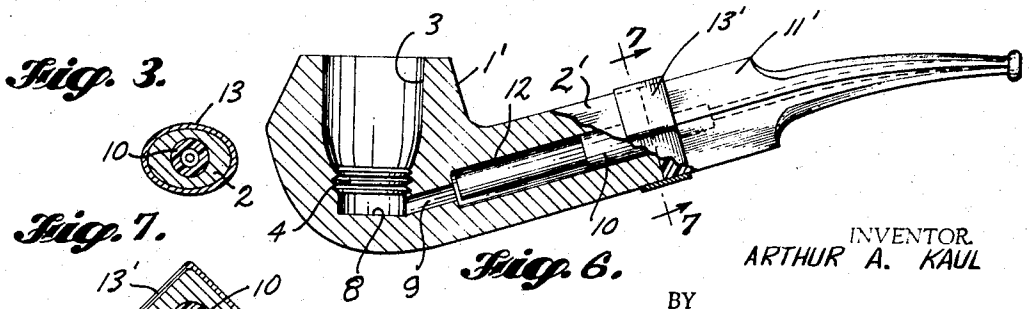
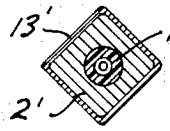


Fig. 6.

Fig. 3.

Fig. 7.



INVENTOR.
ARTHUR A. KAUL

BY

Robert W. Beach

ATTORNEY

United States Patent Office 3,352,309 Patented Nov. 14, 1967

3,352,309

SANITARY SMOKING PIPE

Arthur A. Kaul, 961 Chehalis Ave., Chehalis, Wash. 98532

Filed Dec. 14, 1964, Ser. No. 417,991
1 Claim. (Cl. 131—224)

This invention relates to a tobacco smoking pipe, the construction of which results in a pipe having a desirable sanitary character.

A principal object is to provide such a smoking pipe in which the tobacco burns cleanly and virtually completely, leaving a minimum of residue. To accomplish this object the pipe construction provides a draft well distributed through the tobacco providing efficient combustion of the tobacco.

Another object is to provide a tobacco smoking pipe which will stay dry and clean, and in which formation of condensate which dampens the tobacco will be deterred.

A further object is to provide a tobacco smoking pipe having the aforesaid capabilities which will be of generally conventional appearance and will be light and not cumbersome.

These objects can be accomplished by a pipe having a unitary bowl and an integral stem stub in which the bowl preferably has a flat bottom of substantial area and a perforated grate of hard, impervious, fire-resistant material screwed into the lower portion of the bowl at a location spaced a substantial distance above the bowl bottom. The smoke passage through the stem stub opens into the bowl cavity even with the base. A bit is secured to the projecting end of the stem stub by a push fit.

FIGURE 1 is a top perspective of the smoking pipe with parts in exploded relationship, and having portions broken away.

FIGURE 2 is a longitudinal vertical section through such a smoking pipe and FIGURE 3 is a section through the pipe stem on line 3—3 of FIGURE 2.

FIGURE 4 is a longitudinal vertical section through a portion of the pipe showing a cleaning tool in use. FIGURE 5 is a top perspective of such cleaning tool.

FIGURE 6 is a side elevation of a modified type of smoking pipe having a portion broken away on a vertical longitudinal plane, and FIGURE 7 is a section through the pipe stem on line 7—7 of FIGURE 6.

The bowl **1** of the pipe can be of conventional exterior shape, but it is preferred that it be integral with the pipe stem **2**, both to preserve the appearance of a conventional pipe and for economy of production. The bowl cavity **3**, as shown best in FIGURE 2, preferably tapers downward to a grate **4** with gently curving sides. Below such grate the cavity is cylindrical.

The important novel feature of the pipe bowl is the provision in the lower portion of the cavity **3** of the perforated grate **4**, which will constitute the bottom of the tobacco-holding portion of the bowl cavity. This grate is perforated by having several small holes **5** extending through it. Six of such holes are shown in FIGURES 1 and 2, although the number can vary. These holes are distributed over the area of the grate so that air will flow through such holes and generally through the body of the tobacco above the grate, rather than through any particular channel.

While the pipe bowl and bit are made of conventional pipe materials, the grate **4** preferably is made of material which is durable, noncombustible, nonmetallic, hard, dense and impervious to any liquids which may condense from tobacco in the pipe bowl cavity. Suitable materials for the grate are porcelain, tempered glass or ceramic material.

In order to constitute an effective and well distributed

support for the tobacco in the pipe bowl cavity it is preferred that the diameter of the grate **4** constitute a major portion of the diameter of the upper portion of the cavity **3**. The pattern in which the holes **5** are arranged in the grate is largely immaterial as long as they are well distributed. It is, however, important that the grate be capable of being mounted in the pipe bowl cavity satisfactorily and a convenient arrangement for mounting the grate is by the use of mounting threads so that the grate can be screwed into place.

The periphery of the grate **4**, as shown best in FIGURE 1, has machined or formed on it external threads **6**. These threads are of a shape complemental to the internal threads **7** formed about an annulus in the lower portion of the pipe bowl, but spaced upwardly a substantial distance from the bottom **8** of the bowl. Preferably the area of such bottom is very nearly as great as the area of the grate **6** and the bottom is substantially flat so as to avoid the formation of any appreciable pocket, or sump, in the bottom of the bowl cavity.

From the lower portion of the bowl cavity a lateral smoke passage **9** extends through the stem stub **2**. As shown in FIGURE 2 the opening of this smoke passage is even with the floor or bottom **8** of the bowl cavity so as to eliminate any trap for the accumulation of liquid below the smoke passage. Toward the outer end of the stem stub **2** the smoke passage is considerably enlarged to receive the hollow projection **10** of the pipe bit **11**, which can be engaged in the smoke passage with a push fit. The bore of such projection is large enough to receive in it a cylindrical filter **12**, which extends beyond the end of the projection into the smoke passage. The filter can be made of rolled absorbent paper, or other suitable conventional filter construction.

A filter is desirable to absorb any condensation from the smoke which may pass through the grate, or condense from the smoke below the grate, to prevent passage of condensate into the smoker's mouth. The distribution of draft effected by the grate greatly reduces condensation of moisture from the smoke in the combustion chamber above the grate, which promotes more complete combustion of the tobacco. Also, because of the excellent draft provided by the grate the tobacco can be packed more tightly in the pipe bowl without cutting off the draft through the pipe. Such improved draft also enables the pipe to hold its fire unusually well. Consequently, more tobacco can be placed in a given bowl at a single filling, which will provide a longer smoking period.

Because the grate **4** promotes clean burning of the tobacco in the bowl cavity **3** above the grate there is little tendency for any residue to accumulate in the holes **5**. If these holes should becomes obstructed to any appreciable extent they can be cleaned without the necessity of removing the grate from the pipe bowl. Also, for the same reason there will be a minimum of accumulation of residue on the floor **8** of the bowl cavity because material which would accumulate here either must pass through holes **5** or be precipitated from the smoke.

In FIGURES 4 and 5 a tool is shown which can be used to remove any residue which may accumulate in the bottom of the bowl cavity, or in the grate perforations **5**. On one end of the tool shank **14** is a hoe-shaped scraper **15** and on the other end is a punch **16** of a size to fit the perforations **5**. As shown in FIGURE 4, when the bit **11** is removed from the pipe stem stub **2** the hoe-shaped end of the cleaning tool can be inserted through the smoke passage. Because the bottom of this passage is even with the bottom **8** of the bowl cavity, as shown in FIGURES 2 and 5, the residue can be scraped out through the smoke passage easily.

If it is desired to clean out the perforations **5** the

punch end **16** of the tool can simply be pressed through the apertures, as indicated in broken lines in FIGURE 4. The tool **14, 15, 16** could be made of hardened steel so that the tool, while delicate, will have sufficient strength and rigidity to do an effective cleaning job.

It is preferred that the bit **11** and stem stub **2** be formed so as to prevent their relative rotation when they are fitted together. For this purpose, and to increase the strength of the joint between the bit and the pipe stem stub, it is preferred to provide a ferrule **13** which may be in the form of a metal band and is of a width lengthwise of the pipe stem to provide adequate bearing on opposite sides of the stem joint, which it straddles. Preferably the adjacent ends of the stem stub and the bit are shouldered so that the ferrule **13** will be recessed into these parts to disposed the outer surface of the ferrule flush with the outer surfaces of the stem stub and the bit, as shown best in FIGURE 2, and such parts are generally elliptical.

The principles of the present invention can be applied to different types of pipe shapes. A representative alternative shape of pipe is illustrated in FIGURES 6 and 7. While the exterior shape of bowl **1'** is somewhat different from that of the bowl **1** in FIGURES 1 to 4, the shape of the tobacco cavity is similar. In this instance the stem stub **2'** slopes upwardly from the bowl instead of being substantially perpendicular to the axis of the bowl. The smoke passage **9** is still disposed even with the bottom of the tobacco cavity, although the smoke passage is inclined relative to the plane of the bottom. This relationship of the parts still avoids formation of a sump in the bottom of the bow cavity.

As shown in FIGURE 7 the stem of the pipe is substantially square in cross section at opposite sides of the joint between the bit and the stem stub. In this instance the adjacent ends of the stem stub **2'** and the pipe **11'** are not shouldered to provide a recess for accommodating a ferrule. Instead, the ferrule **13'** encircles the pipe stem as an outstanding band. The portion of this ferrule overlapping the end of the stem stub should be suitable bonded to it and the end of the bit **11'** should fit into the

ferrule with a push fit, as well as the hollow projection **10** of the bit fitting into the smoke passage **9** with a push fit.

I claim as my invention:

In a smoking pipe, a one-piece bowl and stem stub unit, said bowl having an open upper end portion providing a cavity of circular cross section, with a lower portion having a smaller cross-sectional area than the cross section of the upper portion of the cavity, the inner wall of such portion of smaller cross-sectional area having an internal thread at a location spaced above the bottom of such cavity, and a tobacco-supporting grate of uniform thickness and having a smaller diameter than that of said upper portion, of hard, noncombustible, nonmetallic, impervious material having a plurality of perforations therethrough distributed over its area, insertable in the lower portion of the bowl cavity and having an external thread engageable with said internal thread of the bowl cavity wall by inserting said grate into the upper portion of said bowl and screwing it downward for securing said grate in the bowl cavity at a location spaced above its bottom.

References Cited

UNITED STATES PATENTS

764,125	7/1904	Heald	131—224 X
775,624	11/1904	Horn.	
944,418	12/1909	Drew	131—184
1,349,293	8/1920	Perkins	131—224 X
1,839,505	1/1932	Schulz	131—224 X
1,950,645	3/1934	Wheelock	131—224 X
2,140,649	12/1938	Pedery	131—205
2,316,162	4/1943	Helm	131—224 X
2,746,459	5/1956	Coble	131—224 X

FOREIGN PATENTS

5,432	3/1889	Great Britain.
697,036	10/1930	France.
162,537	9/1933	Switzerland.

ALDRICH F. MEDBERY, *Primary Examiner.*

SAMUEL KOREN, *Examiner.*

JOSEPH S. REICH, *Assistant Examiner.*