

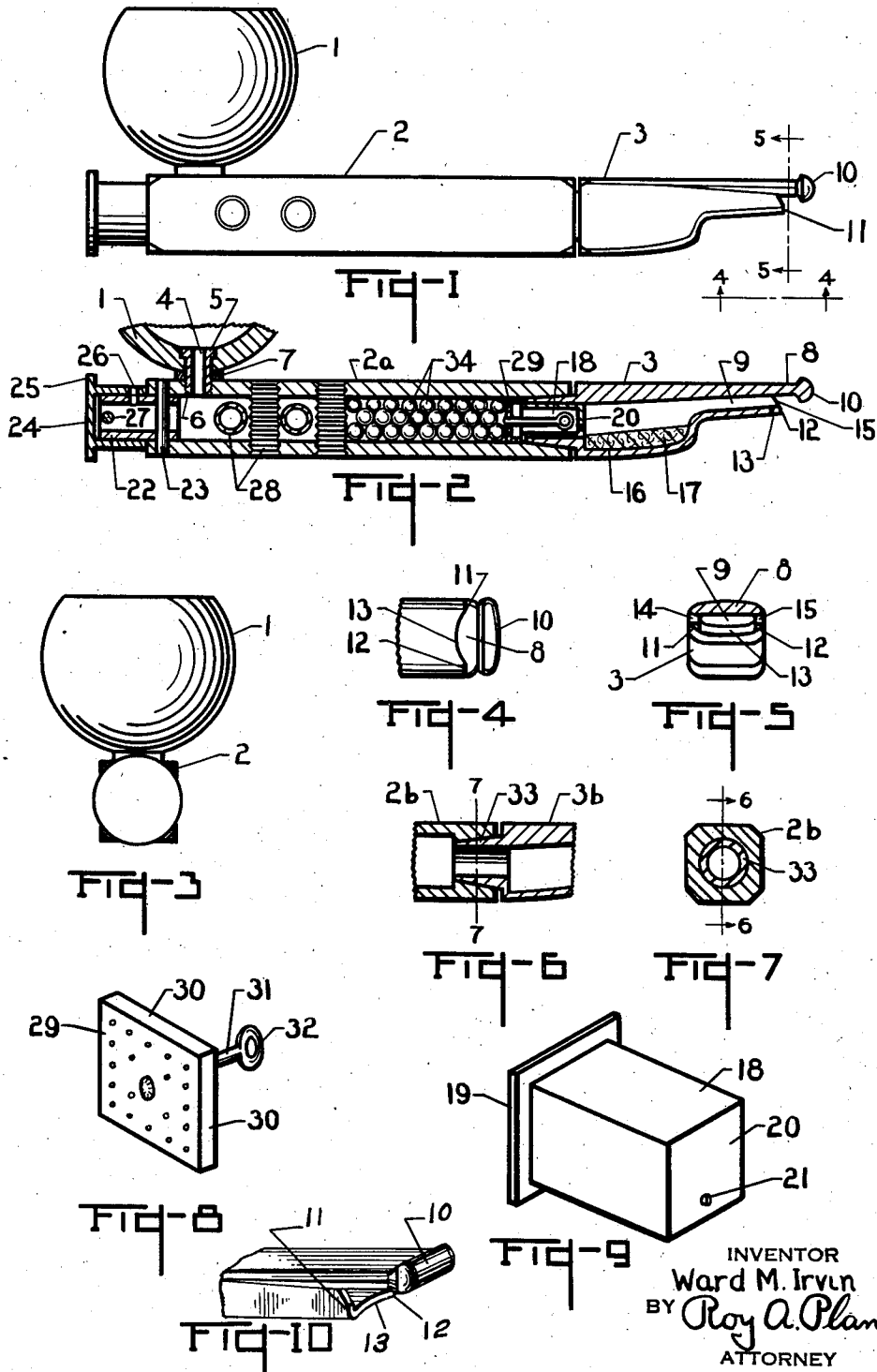
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SMOKING DEVICE

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SMOKING DEVICE

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The present invention relates broadly to means and modes of smoking a material such as tobacco, and in its specific phases to a smoking apparatus, such as a pipe for smoking tobacco, and the treating and handling of such smoke on its way from the pipe bowl to the smoker's mouth.

It is well recognized that the smoking of tobacco in the conventional smoking pipe permits the drawing of condensed liquids containing nicotine into the smoker's mouth, and also that such smoke is normally of a relatively high temperature. These high temperatures are recognized as the common cause of tongue irritation. Moreover, carcinoma or cancer of the mouth is a more or less common complaint which is recognized to occur more often with men, and particularly with men who smoke. With a view to reducing such irritation, some pipes have been constructed with spiral cooling coils, or the like, which have a slight cooling effect on the smoke. Such procedure in turn increases the condensation of liquids of a watery and tarry nature in the smoke so that they are drawn directly in continuous flow and/or slugs through the pipe stem into the smoker's mouth. This is undesirable due to the poisonous nicotine contained in such condensation liquid which also entrains some solid particles. Some pipes have been equipped with filters in an attempt to sponge up some of the liquid condensates in the pipe stem. While such filters do commonly sponge up at least part of the liquids condensed, they are unsatisfactory since they make the pipe harder to smoke, and also make it necessary for the smoker to draw all of the smoke through a body of filter material which, after a short time, has at least its inlet end saturated with poisonous condensates. All of the present day pipes have a small longitudinal bore extending full length through the bit of the pipe, with the result that in smoking such a pipe, the smoke is delivered at relatively high velocity into the smoker's mouth where it impinges upon a small area of the end of the smoker's tongue. This aggravates the irritation of the tongue even when the smoke is at a slightly lower temperature than usual. It was with an object of eliminating, or at least reducing these difficulties, and making a better smoking pipe, that the present invention was developed.

Accordingly, among the objects of the present invention is the provision of a new article for use in the smoking of tobacco.

Another object is to provide an apparatus for use in connection with the smoking of tobacco in a pipe whereby at least part of the vaporized liquid

contained in the smoke is condensed at a point, or points, intermediate the combustion zone and the smoker's mouth, and at least a substantial part of such condensed liquids adsorbed or absorbed in a solid material and thus removed from exposure to the flow of smoke.

Another object is to provide an apparatus for use in the smoking of tobacco wherein the smoke produced is delivered and released initially in the smoker's mouth at a point in front of his teeth.

A further object is to produce a pipe for smoking tobacco wherein the smoke is cooled, purified, and part of the poisonous condensates containing nicotine removed from direct contact with the smoke stream.

Another object is to produce a pipe for smoking tobacco wherein same has a special bit which is exceptionally strong, and eliminates tongue irritation.

A further object is to provide a smoking pipe with a bit which has a three point suspension.

Still further objects and advantages of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims, the annexed drawing and the following description setting forth in detail certain means and modes of carrying out the invention, such disclosed means and modes illustrating, however, but several of the various ways in which the principle of the invention may be used.

In said annexed drawing:

Figure 1 is a side elevational assembly view of one form of a smoking pipe embodying the present invention.

Figure 2 is a longitudinal center section view of a pipe similar to that shown in Figure 1, but with further elements and details present.

Figure 3 is an end elevation view of the pipe as seen from the left end of Figure 1.

Figure 4 is a fragmentary bottom view of a preferred form of the pipe bit looking in the direction of the arrows 4—4 of Figure 1.

Figure 5 is a section of the pipe bit as viewed in the direction of the arrows 5—5 of Figure 1.

Figure 6 is a sectional view showing a modified means of joining the pipe bit to the stem as seen by looking in the direction of the arrows 6—6 of Figure 7.

Figure 7 is a section of the pipe bit and stem as viewed along the line 7—7 of Figure 6.

Figure 8 is an enlarged perspective view of a

preferred form of the screen member illustrated in section as part of Figure 2.

Figure 9 is an enlarged perspective view of a sleeve member insertable in the bit of the pipe as illustrated in section as part of Figure 2.

Figure 10 is a perspective view, in exaggerated size, of the bite end of the bit with a portion of same broken away to more clearly illustrate certain features of the invention.

Referring more particularly to Figure 1, the smoking appliance in preferred construction has a bowl 1, stem 2, and bit 3 suitable for carrying out the principles of the present invention. The stem 2 may be made of various materials such as briar, hard rubber, metal, resin base plastics, such as "Bakelite," or the like. For most purposes I prefer to make the stem out of aluminum, a material which is commercially obtainable in various suitable forms such as castings, tubes, rods, et cetera, which may be finished to desired size and shape. The use of aluminum for this purpose is particularly desirable since this material does not absorb nicotine or other smoke condensation products, is of light weight, neat appearance, has a high heat conductivity, and is easy to work by hand or machine. For simplicity of construction, the stem 2 may be formed from an aluminum tube which is approximately five-eighths inch square on the outside.

The bowl 1 of the pipe may be made of briar, metal, or any other suitable bowl making material. Such bowl may be separately formed and mounted on stem 2, or the bowl and stem may be integrally made in one piece according to standard everyday practice, and the showing in Figure 1 is intended to diagrammatically illustrate either type of construction. Where the bowl and stem are made separately, a convenient way of joining same together is by means of a tubular joining member 4 (Figure 2), which has an outwardly flanged upper end 5 and an externally threaded lower end 6. The bowl 1, in this case, would be suitably drilled and counter-bored to receive the upper end portion of the tubular joining member 4. Stem 2a would also be bored and threaded for engagement with the threads on the lower end of the tubular joining member 4. Where it is desired to elevate the bowl slightly above the stem, a washer 7, or the like, may be utilized for this purpose. The bore of this tubular joining member 4 is preferably several times larger than the ordinary opening at the bottom of present day pipe bowls. This construction permits a free flow of smoke from the bowl to the pipe stem with practically complete elimination of soggy wet heel formation in the bottom of the pipe bowl.

While the bit may be of various types of construction, I prefer to use the construction illustrated in the drawing. A bit of that particular construction eliminates the undesirable irritation effect of hot smoke impinging under rapid flow on a relatively small area of the end of the tongue. This bit, for instance, has a solid bite end 8 which makes the bit exceptionally strong. With the bit gripped between the teeth at the bite end 8, the smoke outlet channel 9 will open in front of the lower teeth, and inside of the lower lip. In this position smoke will be delivered from the bit at three points due to the cut away construction of the lower edge of the bit at the end of channel 9. By cutting the end of the bit as shown in Figures 1, 2, 4, and 5, a three point suspension is attained since the knob end 10 of the bit will bear against the inner edges of the

teeth, while the lower edges 11 and 12 are adapted to bear against the outer edge of the lower teeth, thus giving a comfortable gripping type of bit. The underface of the bit is preferably provided with a cut back portion 13 (Figures 4 and 5) which provides a downward outlet for smoke. The bit also has upper cut back portions 14 and 15 respectively above lower edges 11 and 12. Under smoking conditions, smoke drawn through the stem and bit passes out of same sidewise through opening portions 14 and 15, and downward through opening portion 13, all in front of the smoker's teeth and behind his lips. This procedure completely avoids direct impingement of hot smoke in restricted area on the end of the smoker's tongue with the tongue irritation incident thereto. Moreover, due to the size of the bit, the large size passageway 9, which is preferably several times larger than the opening through present day bits, and the three outlet portions, the flow of smoke from the bit is relatively free and billowy, thus doing away with the undesirable effects of hot high velocity smoke streams universal with the use of present day smoking equipment. Intermediate of the ends of the bit and at the lower portion thereof is preferably provided a well 16 in which any condensate passing through pipe stem 2 will be trapped. If desired, a pad 17 may be placed in this well to absorb and remove from the path of free smoke flow any condensate which reaches this well. Solid porous material such as wood balls, chips, et cetera, as hereinafter described for use in the stem, may be used in the bit in equivalent manner in the place of pad 17, and the showing of the latter is to be considered as diagrammatic of such various equivalent constructions.

While the pipe may have a relatively large open passageway therethrough, I have found that such procedure makes the pipe usually draw too freely. In order to overcome this situation and produce a more billowy delivery of smoke from the bit, I prefer to place in the smoke stream a partition means with a suitable size moderately small perforation through which the smoke has to flow, and by means of which such flow is retarded. A convenient manner of accomplishing this end is by means of a thimble member 18, Figures 2 and 9. This thimble member, for instance, may be provided with a flanged end 19 permitting the thimble member 18 to be removably slipped into the end of the bit 3 and held as shown in Figure 2. The bottom 20 of the thimble 18 is provided with an opening 21 of a suitable size through which smoke is drawn under normal smoking conditions. The smaller this opening is made, the slower will be the volume flow of smoke therethrough and the more billowy the smoke delivered from the bit. By making the opening a little larger than the opening through an ordinary pipe bit, this in combination with the large size of the passageways through the bit, stem, and bowl joining member, permits back draft which I have found makes the pipe stay lighted better and reduces what is known as "match smoking." This opening may be at various points on bottom 20, but for most purposes I prefer to place it near the lower edge thereof as shown, since this helps to deposit any condensate passing therethrough in well 16, and also has a tendency to produce a cooler smoke due to stratification of hot smoke in the stem 2a, with the hotter smoke rising to the top thereof. The end of the stem which is opposite to that

carrying the bit, may be of tight sealed construction, and such may be considered as diagrammatically shown in Figure 1. For most purposes, however, I prefer to provide an open construction as is shown in Figure 2. In this case, an open ended sleeve 22 is tightly fitted in the end of stem 2a at which point it may be anchored in place, for example by means of a pin 23. A cap 24 is preferably mounted on sleeve 22 with a moderately tight rotary fit, and if desired, such cap may be provided with an extending flanged end 25 for ease of rotation and removal of same. This type of construction also makes the cap adaptable for use as a tamper to compress the tobacco in bowl 1. Cap 24 and sleeve 22 may also have an opening 26 therethrough so that by rotation to align the openings through these members, air may be bled into the smoke stream for further cooling action. A cross pin 27 mounted in sleeve 22 at the outer end thereof, but not extending therefrom, provides a convenient member for contacting the air releaser on a tire filling air hose where it is desired to clean the pipe by blowing air therethrough.

The stem 2a may be cross perforated if desired, and hollow tubes inserted therein. These tubes are preferably externally threaded to increase heat absorbing surface area, and at the same time produce a more effective anchor for joining same to the stem. Under these conditions, the hot smoke received from bowl 1 through tubular joining member 4 into stem 2a is baffled back and forth several times in flowing past hollow tubes 28, and in this manner considerable heat is given up, and condensation of part of the vaporized liquids in the smoke facilitated.

I have found that if the smoke passing from the bowl of the pipe through the stem to the bit is brought in contact with small wooden balls 34 which are preferably about the size of B-B shot, that liquid condensed out of the smoke and coming in contact with said wooden balls will be absorbed or adsorbed into same, and thus removed from direct contact with the smoke stream. This procedure automatically removes a portion of the poisonous ingredients in the smoke from further contact therewith, and in doing so produces a cooler, milder, and sweeter smoke. After these wood balls have absorbed a considerable amount of the condensed poisonous strong aroma elements, they may be removed from the stem, the latter cleaned, and fresh wood balls inserted. The invention is not limited to the use of balls, but rather to any form of solid material which will completely remove a portion of the condensed liquids from further contact with the smoke stream, and typical of another form of this material would be small wooden plugs or chips. Of the many forms of material suited for this purpose, balsa wood is exceptionally satisfactory due to its porosity and liquid absorbing capacity. Among other materials useable in similar manner are basswood, white birch, sweet gumwood, punk, porous ceramic members, et cetera. Briar chips are also useable for this purpose, although they are not as effective as a more porous material such as balsa wood. Treatment of the smoke with this liquid condensate removing system produces a purified smoke which I have found causes less discoloration of the smoker's teeth than the smoking of an ordinary pipe, cigarettes, or cigars, in an equal amount of smoking.

In order to prevent the wooden balls or chips from falling out of the stem when the bit is re-

moved for examination or cleaning, I prefer to use a removable perforated member 29 (Figures 2 and 8). For stability, this perforated member may be provided with flanged edges 30, and for convenience of removal, it may also be provided with a handle member 31, which may have a ring end 32 if desired. Where the stem 2a has hollow tubes 28 as shown in Figure 2, the wooden balls or chips will lie in the space between perforated member 29 and the first of these hollow tubes. The use of these hollow tubes or other cooling means at a point preceding the passage of the smoke through the wooden balls or chips aids in condensing some of the nicotine containing vapors in the smoke so that same may be absorbed in said balls or chips, thus producing a milder and more healthful smoke. The baffling of the smoke back and forth through the balls, chips, or like absorbent material is an effective aid to the depositing of condensed liquid carried by the smoke so that it can be removed from the smoke stream as set forth.

Instead of using a tapered substantially rectangular radial section joinder for the stem and bit as typically shown longitudinally in Figure 2, the joining end of the bit may be in the row of a hollow truncated cone 33 as shown in Figures 6 and 7. The corresponding end of stem 2b, in such case, would have a corresponding tapered opening formed in any conventional well known way, such as by forming from a solid bar of stock, upset forging, bushing, or the like. The showing in Figures 6 and 7 is intended to diagrammatically illustrate any of these forms of construction.

Other modes of applying the principle of my invention may be employed instead of those explained, change being made as regards the means herein disclosed, provided those stated by any of the following claims or their equivalent be employed.

I therefore particularly point out and distinctly claim as my invention:

1. As an article of manufacture, a tobacco smoker's appliance comprising a bit, said bit having a short solid bite end member with a knob end, a longitudinal passageway extending from the end of said bit opposite to said bite end, and terminating at the inner end of said solid bite member, and extending side members at the end of said passageway, said side members cooperating with said knob to provide three-point suspension for said bit under conditions of use.

2. As an article of manufacture, a tobacco smoker's appliance comprising a bit, said bit having a short solid bite end member with a knob end, an open ended longitudinal passageway extending from the end of said bit opposite to said bite end, and terminating at the inner end of said solid bite member but spaced from the knob end thereof, means at the bite end of said bit for aiding in the guiding of smoke emitted from said passageway downward and sidewise in both directions while leaving said passageway open at all times, a well in said bit, and means within said bit for absorbing condensed liquids in smoke flowing therethrough.

3. A device for use in the smoking of tobacco or the like, which comprises a bit, said bit having a solid bite end and an open ended smoke passageway lengthwise of said bit, said passageway terminating just short of said bite end, and longitudinally extending side guards at the outlet end of said passageway.

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