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DRAWINGS ATTACHED

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F4F 9E1X 9EY
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(54) CIGARETTE LIGHTER

(71) We, RONSON PRODUCTS LIMITED, a British Company, of 5, London Wall Buildings, Finsbury Circus, London, E.C.2, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The invention relates to a cigarette lighter and particularly to a lighter of the kind which burns liquified petroleum gas such as butane. Such cigarette lighters generally have an adjuster which allows manual control of the burner valve for effecting adjustment of the flame height. A danger with such cigarette lighters is that the adjuster may be moved accidentally while the lighter is being carried in a handbag or pocket. This can give rise to an unexpectedly high flame when the lighter is next used and it is possible that this may cause injury. An object of the invention is to provide a gas lighter in which the risk of accidental adjustment of flame height is obviated or reduced.

25 According to the invention there is provided a gas fuelled cigarette lighter including a burner; an actuating member which is resiliently biased to an inoperative position and which, to actuate the lighter, is movable towards the body of the lighter to an operative position; and an adjuster which controls the burner to vary the flame height, wherein the adjuster has an operating arm the free end of which, when the actuating member is in its inoperative position, is positioned behind and adjacent an opening in the actuating member, and which, when the actuating member is moved to its operative position becomes accessible in the opening for manual adjustment.

It will be seen that with this arrangement the end of the operating arm is normally shielded by the actuating member so that accidental movement of the arm while the lighter is being carried is unlikely.

In a preferred arrangement the end of the operating arm protrudes through the open-

ing in the actuating member when this member is in its operative position. The adjuster may be a part of the burner valve which is rotatable about the axis of the valve in which case the end of the operating arm will be swung in the opening, which is formed as a slot, in the actuating member. Other forms of flame height adjuster may be used in which case provision is made for an appropriate movement of the end of the operating arm, for example a movement which is towards or away from the actuating member.

The actuating member may extend along one side of the lighter in the direction of the axis of the burner valve, in which case the operating arm may be straight and extend from the adjuster towards the opening in the actuating member. This member may alternatively extend along the top of the lighter in a direction transverse to the axis of the burner valve in which case the operating arm may be cranked so that the free end extends towards the actuating member. Such arrangements are particularly suitable if the adjuster is rotatable about the axis of the valve.

This actuating member may be formed as a lever which is pivoted at one end to the case of the lighter and the other end of which moves into the case, at least in part, when the member is moved into its operative position.

The invention will further be described by way of example with reference to the accompanying drawings, in which:—

Figure 1 is a part-sectional side elevation of a cigarette lighter in accordance with the invention shown in an inoperative condition;

Figure 2 is a part-sectioned side elevation of the lighter of Figure 1 shown in an operative condition;

Figure 3 is an end elevation of the lighter of Figures 1 and 2 shown in the operative condition;

Figure 4 is a part-sectional side elevation of another lighter in accordance with the

invention shown in an inoperative condition;

Figure 5 is a part-sectioned side elevation of the lighter of Figure 4 shown in an operative condition; and

Figure 6 is a plan view of the lighter of Figures 4 and 5.

Referring to Figures 1 to 3 the lighter has a case 1 which houses a container 2 for liquid butane. The lighter is operated by squeezing an actuating lever 3, which is pivoted at 4, from the inoperative position shown in Figure 1 to the operative position shown in Figure 2. The lever 3 is resiliently biased to the inoperative position by a spring (not shown). Movement of the lever 3 to the operative position causes a curved plate 5 attached to the lever to engage and lift a fork 6 which raises a hollow valve stem 7 in the burner 8, thereby opening a gas valve to allow butane gas to emerge through the stem 7 and thence through a hole 9 in the top 10 of the lighter. At the same time, movement of the lever 3 operates a mechanism (not shown) which produces sparks to ignite the gas and produce the required flame.

The height of the flame is governed by the rotation of an adjuster 11 which forms part of the burner 8. Rotation of the adjuster about the axis 12 of the burner is effected by means of an operating arm 13 fixed to the adjuster and having a projecting end 14. Movement of end 14 to left or right as seen in Figure 3 turns the adjuster 11 and thus controls the flame height.

The end 14 of the arm 13 is situated behind the hole 15 in the lever 3. With the lever in the inoperative position shown in Figure 1 the end 14 of the operating arm is beneath the surface of the lever. Thus, there is little danger that the adjuster 11 will be turned by accidental movement of arm 13 when the lighter is being carried since in that position the end 14 of the arm 13 is shielded by the lever 3. When the lever 3 is in the operative position the end 14 of the arm 13 projects through the hole 15 to allow manual adjustment of arm 13.

Referring now to Figures 4 to 6 there is shown another embodiment of the invention similar in many respects to the embodiment of Figures 1 to 3. The same reference numerals are used for like parts. However, instead of the actuating lever 3 being along the side of the case 1 it is situated along the top of the case, being pressed downwardly to actuate the lighter. The lever 3 is pivoted at 4 and is resiliently biased by a spring, not shown, to the inoperative position shown in Figure 4. The operative position is shown in Figure 5. The burner 8 of the lighter is again opened by raising the valve stem 7 by means of a fork member 6 which in this case is pivoted at 16 and

is depressed by a projection 17 on lever 3. The adjuster 11 is similar to that of the embodiment described with reference to Figures 1 to 3. However, instead of being straight the operating arm 13 is bent at right angles so that the free end 14 is directed upwardly parallel to the axis 12 of the burner 8. The lever 3 again has a hole 15 through which the end 14 projects when the lighter is actuated as shown in Figure 5. With the lighter in the inoperative, carrying, condition shown in Figure 4 the end 14 is shielded by the lever 3. Thus, again, accidental operation of the adjuster 11 is unlikely. Figure 6 is a plan view of the lighter of Figures 4 and 5.

In this embodiment the lever 3 is formed with a hole 18 through which gas emerging from the arm 7 passes, this hole corresponding to the hole 9 of the embodiment of Figures 1 to 3.

In both the illustrated embodiments it will be seen that when the actuating lever 3 is moved into its operative position it is, in part, housed within the case 1.

WHAT WE CLAIM IS:—

1. A gas fuelled cigarette lighter including a burner; an actuating member which is resiliently biased to an inoperative position and which, to actuate the lighter, is movable towards the body of the lighter to an operative position; and an adjuster which controls the burner to vary the flame height, wherein the adjuster has an operating arm the free end of which, when the actuating member is in its inoperative position, is positioned behind and adjacent an opening in the actuating member, and which, when the actuating member is moved to its operative position becomes accessible in the opening for manual adjustment.

2. A gas fuelled cigarette lighter as claimed in Claim 1 wherein the free end of the said operating arm protrudes through the opening when the actuating member is in its operative position.

3. A gas fuelled lighter as claimed in claim 1 or claim 2 wherein the adjuster is a part of the burner and is rotatable about the axis of the burner.

4. A gas fuelled cigarette lighter as claimed in claim 3 wherein the actuating member extends along a side of the body of the lighter in the direction of the axis of the burner and the adjuster operating arm is straight and extends towards the opening, formed as a slot, in the actuating member.

5. A gas fuelled cigarette lighter as claimed in claim 3 wherein the actuating member extends along the top of the lighter in a direction transverse to the axis of the burner and the adjuster operating arm is cranked so that its free end extends parallel to the burner axis and upwardly towards

invention shown in an inoperative condition;

Figure 5 is a part-sectioned side elevation of the lighter of Figure 4 shown in an operative condition; and

Figure 6 is a plan view of the lighter of Figures 4 and 5.

Referring to Figures 1 to 3 the lighter has a case 1 which houses a container 2 for liquid butane. The lighter is operated by squeezing an actuating lever 3, which is pivoted at 4, from the inoperative position shown in Figure 1 to the operative position shown in Figure 2. The lever 3 is resiliently biased to the inoperative position by a spring (not shown). Movement of the lever 3 to the operative position causes a curved plate 5 attached to the lever to engage and lift a fork 6 which raises a hollow valve stem 7 in the burner 8, thereby opening a gas valve to allow butane gas to emerge through the stem 7 and thence through a hole 9 in the top 10 of the lighter. At the same time, movement of the lever 3 operates a mechanism (not shown) which produces sparks to ignite the gas and produce the required flame.

The height of the flame is governed by the rotation of an adjuster 11 which forms part of the burner 8. Rotation of the adjuster about the axis 12 of the burner is effected by means of an operating arm 13 fixed to the adjuster and having a projecting end 14. Movement of end 14 to left or right as seen in Figure 3 turns the adjuster 11 and thus controls the flame height.

The end 14 of the arm 13 is situated behind the hole 15 in the lever 3. With the lever in the inoperative position shown in Figure 1 the end 14 of the operating arm is beneath the surface of the lever. Thus, there is little danger that the adjuster 11 will be turned by accidental movement of arm 13 when the lighter is being carried since in that position the end 14 of the arm 13 is shielded by the lever 3. When the lever 3 is in the operative position the end 14 of the arm 13 projects through the hole 15 to allow manual adjustment of arm 13.

Referring now to Figures 4 to 6 there is shown another embodiment of the invention similar in many respects to the embodiment of Figures 1 to 3. The same reference numerals are used for like parts. However, instead of the actuating lever 3 being along the side of the case 1 it is situated along the top of the case, being pressed downwardly to actuate the lighter. The lever 3 is pivoted at 4 and is resiliently biased by a spring, not shown, to the inoperative position shown in Figure 4. The operative position is shown in Figure 5. The burner 8 of the lighter is again opened by raising the valve stem 7 by means of a fork member 6 which in this case is pivoted at 16 and

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WHAT WE CLAIM IS:—

1. A gas fuelled cigarette lighter including a burner; an actuating member which is resiliently biased to an inoperative position and which, to actuate the lighter, is movable towards the body of the lighter to an operative position; and an adjuster which controls the burner to vary the flame height, wherein the adjuster has an operating arm the free end of which, when the actuating member is in its inoperative position, is positioned behind and adjacent an opening in the actuating member, and which, when the actuating member is moved to its operative position becomes accessible in the opening for manual adjustment.

2. A gas fuelled cigarette lighter as claimed in Claim 1 wherein the free end of the said operating arm protrudes through the opening when the actuating member is in its operative position.

3. A gas fuelled lighter as claimed in claim 1 or claim 2 wherein the adjuster is a part of the burner and is rotatable about the axis of the burner.

4. A gas fuelled cigarette lighter as claimed in claim 3 wherein the actuating member extends along a side of the body of the lighter in the direction of the axis of the burner and the adjuster operating arm is straight and extends towards the opening, formed as a slot, in the actuating member.

5. A gas fuelled cigarette lighter as claimed in claim 3 wherein the actuating member extends along the top of the lighter in a direction transverse to the axis of the burner and the adjuster operating arm is cranked so that its free end extends parallel to the burner axis and upwardly towards



the opening, formed as a slot, in the actuating member.

- 5 6. A gas fuelled lighter as claimed in any preceding claim wherein the actuating member is formed as a lever which is pivotally connected at the end to the case of the lighter and the other end of which moves into the case when the member is moved into its operative position.
- 10 7. A gas fuelled cigarette lighter substan-

tially as herein described with reference to Figures 1 to 3 or Figures 4 to 6 of the accompanying drawings.

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