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(71) Applicants:
- **Yates, Marc**
  St John
  Jersey JE3 4FW (GB)
- **Yates, Michaela**
  St John
  Jersey JE3 4FW (GB)

(72) Inventors:
- **Yates, Marc**
  St John
  Jersey JE3 4FW (GB)
- **Yates, Michaela**
  St John
  Jersey JE3 4FW (GB)

(74) Representative: **Stanley, David William**
Stanleys
Intellectual Property
Kings Court
12 King Street
Leeds LS1 2HL (GB)

(54) Flame extinguisher for wick burner

(57) Tongs arms 10 are urged together against a resilient bias to bring halves 2 of a chamber firmly together. The substantially closed and relatively small chamber quickly starves a burning candlewick 17 of oxygen, which causes its flame to be extinguished without residual smoke. The tongs are then drawn upwardly with the two chamber halves 2 still firmly urged together, such that opposing edges of a gap in the base of the closed chamber are drawn over the wick 17. The wick 17 itself passes through the gap, but any deposits 18 on the wick 17 are too small to pass through the gap. Thus, the opposing edges of the chamber halves 2 gently rub any carbon or other deposits 18 off the wick 17 to effect a cleaning or trimming action on the wick 17. Deposits 18 that are trimmed from the wick 17 in this way are retained inside the chamber and do not drop into the molten wax 16.

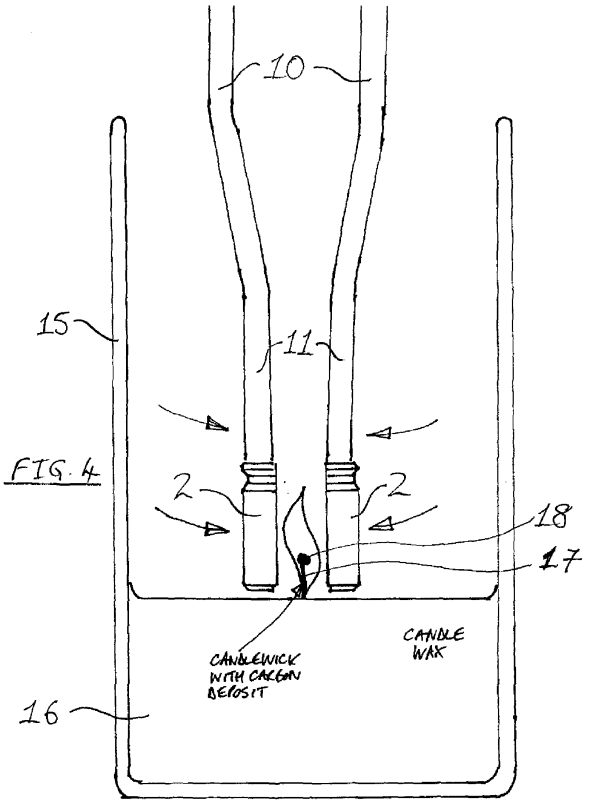

FIG. 4

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Description

[0001] The present invention relates to wick snuffers - that is, devices for extinguishing a burning wick - and is concerned particularly although not exclusively with candle snuffers.

[0002] The burning of candles for enjoyment, by necessity and for ceremonial and other aesthetic reasons is extremely widespread. There are three main types of candle - pillar candles, votives and container candles. Pillar candles are self-supporting and are usually burnt on a stand. Votive candles (sometimes called refills) are typically small, moulded, scented candles with a single wick which are designed to be dropped into and burnt in a glass container. Container candles are generally larger candles which are made in the container in which they are then sold.

[0003] Extinguishing the burning flame of a candle is typically achieved in three ways, namely blowing it out, using a bell-shaped candle snuffer placed over it or by pinching it out using fingers or snuffers utilising a similar pinching action. None of these methods is entirely satisfactory, and each method has undesirable or unsafe results.

[0004] By blowing out a candle flame, this method could prove to be dangerous either by blowing hot wax onto nearby surfaces or persons, or because of the need to get close to the flame to blow it out, by bringing combustible material, such as hair and clothing, close to the candle flame and risking it catching alight. In addition, a candlewick extinguished in this way is almost certainly going to smoke, and thereby cause annoyance and irritation to persons nearby. The principle reason why a candlewick smokes in this way is because carbon deposits which have developed on the candlewick whilst it was burning, not only increase the surface area of the candlewick available to draw up molten wax, but also retain sufficient heat after the flame has been blown out, to continue to glow and smoulder and thereby create smoke. In addition, a candlewick which has not been cleaned of these carbon deposits and trimmed is likely to cause problems when the candlewick is re-lit. For example, with container candles, these may include a smoking and/or excessively large flame which will leave sooty deposits on the inner side of the container and/or nearby furnishings and decoration. With multi-candlewick candles, uneven burning of the candle may result, and any pillar candles burnt in this manner may ultimately drip wax causing damage to nearby furnishings and decoration, as well as causing a potential fire hazard.

[0005] Using a bell-shaped candle snuffer and placing it over the flame of a lit candle avoids the hazards of blowing hot wax off the candle and risk of nearby material catching alight, but it has exactly the same results in creating a smoking candlewick. The use of a bell-shaped candle snuffer is also impractical with many modem derivations of a candle, including container and votive candles, large pillar candles and highly decorative carved candles.

[0006] Extinguishing the flame of a lit candle by pinching it with the fingers clearly risks the person attempting it getting burnt, although pinching a candlewick usually also crushes any of the carbon deposits on the candlewick and thereby prevents them from continuing to smoke after the flame has been extinguished. Thus, mechanical snuffers which have a pinching action may be used to avoid the risks of burning. The pinching method of extinguishing a candlewick does, however, have some disadvantages. One disadvantage is that any large carbon deposits on the candlewick, when crushed by this type of candle snuffer, are likely to drop into the molten wax of the extinguished candle, and thereby create an unsightly area which will remain, and get worse each time the candle is extinguished, for the life of the candle.

[0007] Earlier attempts by previous inventors to produce candle snuffers using a pinching action to extinguish a candlewick flame easily, efficiently, without causing smoke, whilst at the same time cleaning and trimming the candlewick without depositing debris in the molten wax of the candle have generally failed. Whilst individual inventions may claim to achieve one or more of the above results, none manage all of them.

[0008] US Patent No. 5,282,737 to Ray discloses a candle snuffer in the form of tongs having wettable snuffing surfaces and means for wetting the snuffing surfaces. Such a method of snuffing candles is not practical, as it relies on having water available to wet the snuffers. It is also likely to cause debris and dirty water droplets to fall into the molten wax pool.

[0009] US Patent No. 5,971,081 to Stewart discloses a tweezers-like device with wax pads attached to the tips of it, which extinguishes a candlewick by bringing the wax pads together and squeezing the candlewick. As wax is itself flammable, this method could be dangerous, and in any event, the wax pads would need frequent changing, which makes the device impractical. It would also cause debris from the extinguished candlewick to be deposited into the molten wax.

[0010] UK Patent Application No. 2 349 686 to Jones discloses a candle and wick snuffer with two non-flammable tips which, when brought together trapping a candlewick between them, extinguish the flame. At least one of the tips must be an absorbent material which should be impregnated with a non-flammable scented substance which, when heated by the lit candlewick as it is extinguished, dissipates its fragrance. This device, like other snuffers using a pinching action, does not adequately prevent debris from falling into the molten wax, and by virtue of the requirement to have an absorbent pad which will quickly become dirty with carbon and needs replenishing with a non-flammable substance, is not practical.

[0011] US Patent No. 6,435,858 to Cormier and Dion shows a snuffer comprised of bent wire with quenching tabs which are brought together so as to pinch the candlewick and extinguish it. This action crushes any carbon

deposits on the candlewick and prevents them smoking but, in doing so, the carbon debris drops into the molten wax.

[0012] Of other patents for candle snuffers using methods other than a pinching method, US Patent No. 4,497,374 to Millar discloses a fork-like device with two tines which are placed either side of the lit candlewick, and as they are drawn upwards, the flame is extinguished. This device, by not enclosing the burning candlewick, is not likely to be as effective in fully extinguishing the flame and in operation likely to cause debris to fall into the molten wax. In addition, owing to its design, it is impractical for use with container candles and in any event, relies upon a skill to locate the tines accurately either side of the candlewick, which will be difficult for an average user to master.

[0013] Preferred embodiments of the present invention aim to provide a candle snuffer for use in extinguishing a flame of a burning candle without creating smoke and for cleaning and trimming of a charred end of a candlewick as part of the action of extinguishing a flame.

[0014] According to one aspect of the present invention, there is provided a wick snuffer comprising:

a chamber arranged to receive a burning wick and extinguish it through oxygen starvation; and

a plurality of surfaces moveable between an open position in which they are spaced apart and a closed position in which they are brought together to be disposed closely around a wick when in the chamber, with a predetermined gap between said surfaces to allow the passage of the wick through said gap.

[0015] Preferably, said chamber has a bottom that is substantially closed apart from said gap, when placed around a wick.

[0016] Preferably, the wick snuffer has a pair of said surfaces.

[0017] Preferably, said chamber comprises two parts that are adapted to be opened to allow positioning of the chamber about a wick and to be brought together to close the chamber around a wick.

[0018] Preferably, said chamber parts are substantially symmetrical about a longitudinal axis of the chamber.

[0019] A wick snuffer as above may further comprise resilient bias means for biasing said chamber parts into an open position.

[0020] A wick snuffer as above may further comprise a pair of arms on which said chamber parts are supported, said arms being moveable towards and away from one another to move said chamber parts between open and closed positions.

[0021] Preferably, said arms are moveable by a tongs or scissors action.

[0022] Preferably, said chamber is elongate and said surfaces are provided at a bottom end of the chamber.

[0023] Preferably, said chamber is substantially cylindrical.

[0024] Preferably, said chamber has an internal diameter in the range 5 to 30 mm.

[0025] Preferably, said chamber has an internal diameter in the range 5 to 20 mm.

[0026] Preferably, said chamber has a length in the range 15 to 50 mm.

[0027] Preferably, said chamber has a length in the range 20 to 40 mm.

[0028] Preferably, said gap has a width in the range 1 to 3 mm.

[0029] A wick snuffer as above may further comprise means for adjusting the size of said gap.

[0030] In another aspect, the invention provides a method of snuffing a wick, comprising the steps of:

placing a chamber around a burning wick to extinguish the burning wick through oxygen starvation;

simultaneously placing a plurality of surfaces closely around the base of the exposed wick in the chamber, with a predetermined gap between said surfaces to allow the passage of the wick through said gap; and

moving said surfaces along the length of the exposed wick in the chamber, thereby to clean combustion residues from said wick.

[0031] Preferably, such a method is carried out by use of a wick snuffer according to any of the preceding aspects of the invention.

[0032] Preferably, the wick is a candlewick.

[0033] For a better understanding of the invention, and to show how embodiments of the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings, in which:

Figure 1 is a side view of a candle snuffer;

Figure 2 is a bottom view of the candle snuffer;

Figure 3 is a half-sectional view taken on the line A-A of Figure 2;

Figure 4 illustrates the candle snuffer, with arms attached, in use;

Figure 5 is a side perspective view of the candle snuffer with arms attached;

Figure 5A is a cross-sectional view of one of the arms;

Figure 6 is a view similar to Figure 5, but showing an alternative design; and

Figure 6A shows the cross-sectional shape of the

arms of the candle snuffer of Figure 6.

[0034] In the figures, like references denote like or corresponding parts.

[0035] The illustrated candle snuffer comprises a chamber 1 that is arranged to receive a burning candlewick 17 and extinguish it through oxygen starvation.

[0036] The chamber 1 comprises two identical halves 2 that are arranged symmetrically about a longitudinal axis X-X. The chamber 1 is substantially cylindrical, except at its base 3 and its head 5, where a decorative pattern is provided on the external surface.

[0037] The two chamber halves 2 are arranged to be a close fit with one another such that, when brought together, the chamber 1 is substantially closed. This is with the exception of a small gap 6 that is defined at the base 3 of the chamber 1, where opposing edges 4 of the two chamber halves 2 provide surfaces which are disposed closely around the candlewick 17 but between which the candlewick 17 can pass. The two chamber halves 2 are carried at respective ends of arms 10 of resilient tongs.

[0038] Figure 4 shows the candle snuffer ready for use in a container candle, comprising wax 16 within a container 15 and a wick 17 that is alight. The tongs are provided with a resilient bias that urges the chamber halves 2 into an open position as shown in Figure 4. In this position, end portions 11 of the arms 10 are substantially parallel to one another. The chamber halves 2 are sufficiently far apart to be placed readily around the burning wick 17.

[0039] With the tongs disposed as shown in Figure 4, the arms 10 are urged together against the resilient bias of the tongs, to bring the chamber halves 2 firmly together. The substantially closed chamber 1 quickly starves the burning wick 17 of oxygen, which causes its flame to be extinguished without residual smoke. The relatively small size of the chamber 1 leads to rapid oxygen starvation.

[0040] The tongs are then drawn upwardly with the two chamber halves 2 still firmly urged together, such that the opposing edges 4 of the gap 6 in the base 3 of the closed chamber 1 are drawn over the wick 17. The wick 17 itself passes through the gap 6, but any deposits 18 on the wick 17 are too small to pass through the gap 6. Thus, as the tongs are drawn up, the opposing edges 4 of the chamber halves 2 gently rub any carbon or other deposits 18 off the wick 17 to effect a cleaning or trimming action on the wick 17. Deposits 18 that are trimmed from the wick 17 in this way are retained inside the chamber 1 and do not drop into the molten wax 16.

[0041] Figure 5 shows the tongs with chamber halves 2 attached. The tongs are preferably made of a spring metal, which provides the resilient bias that locates the chamber halves 2 in their open position. Flattened portions 12 are formed on the arms 10, to provide areas that may readily be gripped by a user.

[0042] Figure 5A shows in cross-section one of the flattened portions 12 and the circular cross-section of the rest of the arm 10.

[0043] In the modification of Figure 6, tongs are formed from a single piece of metal that is bent and pressed to be of part-circular cross-section, as shown in Figure 6A. This shape of metal arms 20 permits the chamber halves 2 to be formed integrally with the tongs.

[0044] Instead of the illustrated spring tongs arrangements, any other suitable means may be provided for bringing the chamber halves 2 together and apart. For example, a scissors mechanism or a trigger-operated mechanism may be used. Although the use of arms 10 is convenient to allow wicks to be reached within a container candle, for example, the arms 10 may be dispensed with and the chamber halves 2 connected together directly -- for example, as by a hingeso that they may be opened and closed directly.

[0045] By way of example, the illustrated chamber 2 may have a length of approximately 30 mm and an external diameter of approximately 12 mm. The gap 6 may have a width in the range 1.5 to 2 mm -- although this may be varied in dependence upon the size of the wick such as 17 to be trimmed. Means may be provided for adjusting the size of the gap 6.

[0046] The gap 6 need not extend the full diameter of the chamber 1 as illustrated, provided that it is sufficiently large to allow the passage therethrough of the wick 17. The chamber 1 may be composed of more than two parts that are adapted to open and close. The chamber 1 may alternatively be of substantially solid construction, and a mechanism provided to bring opposing surfaces such as those of edges 4 towards and away from one another to define a gap such as 6 for the passage of a wick such as 17. It is preferred but not absolutely essential to provide the chamber 1 with a base such as 3, provided that opposing surfaces such as those provided by the opposing edges 4 are provided to close around a wick such as 17.

[0047] Thus, the embodiments of the invention as illustrated and described may, for the first time, achieve the desirable results of safely extinguishing a burning candlewick, whatever the type of candle being used, with no resultant smoke being produced, cleaning and trimming the candlewick ready to be re-lit, and at the same time ensuring that debris from this action is effectively retained within the snuffer and not deposited in the molten wax of the candle. The snuffers may be simply made and do not rely on any other source (such as water or other non-flammable substance) in order to work, and are therefore highly portable. There are no replaceable parts upon which the snuffers rely to work. The snuffers can be used to extinguish many candlewicks consecutively without cleaning, owing to the fact that the non-crushing action of removing the carbon deposits from the candlewick keeps those deposits whole, still containing enough molten wax to stick and be retained inside the cavity of the chamber. The chamber has the capacity to retain such carbon debris whilst extinguishing further candlewicks. Debris which is retained inside the chamber may

be easily rinsed out with warm or hot water.

[0048] The snuffers may be fabricated in a number of ways. Any non-flammable metal of a reasonable hardness can be used in the manufacture of embodiments of the invention and decorative detail and finishes can be applied as desired.

[0049] Although each illustrated embodiment of the invention is described as a candle snuffer, which is its principal intended use, it will be appreciated that it could be used for snuffing other wicks - e.g. wicks of oil lamps.

[0050] In this specification, the verb "comprise" has its normal dictionary meaning, to denote non-exclusive inclusion. That is, use of the word "comprise" (or any of its derivatives) to include one feature or more, does not exclude the possibility of also including further features.

[0051] All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

[0052] Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0053] The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Claims

1. A wick snuffer comprising:

   a chamber arranged to receive a burning wick and extinguish it through oxygen starvation; and a plurality of surfaces moveable between an open position in which they are spaced apart and a closed position in which they are brought together to be disposed closely around a wick when in the chamber, with a predetermined gap between said surfaces to allow the passage of the wick through said gap.

2. A wick snuffer according to claim 1, wherein said chamber has a bottom that is substantially closed apart from said gap, when placed around a wick.

3. A wick snuffer according to claim 1 or 2, having a pair of said surfaces.

4. A wick snuffer according to claim 1, 2 or 3, wherein said chamber comprises two parts that are adapted to be opened to allow positioning of the chamber about a wick and to be brought together to close the chamber around a wick.

5. A wick snuffer according to claim 4, wherein said chamber parts are substantially symmetrical about a longitudinal axis of the chamber.

6. A wick snuffer according to claim 4 or 5, further comprising resilient bias means for biasing said chamber parts into an open position.

7. A wick snuffer according to claim 4, 5 or 6, further comprising a pair of arms on which said chamber parts are supported, said arms being moveable towards and away from one another to move said chamber parts between open and closed positions.

8. A wick snuffer according to claim 7, wherein said arms are moveable by a tongs or scissors action.

9. A wick snuffer according to any of the preceding claims, wherein said chamber is elongate and said surfaces are provided at a bottom end of the chamber.

10. A wick snuffer according to any of the preceding claims, wherein said chamber is substantially cylindrical.

11. A wick snuffer according to any of the preceding claims, wherein said chamber has an internal diameter in the range 5 to 30 mm.

12. A wick snuffer according to any of the preceding claims, wherein said chamber has an internal diameter in the range 5 to 20 mm.

13. A wick snuffer according to any of the preceding claims, wherein said chamber has a length in the range 15 to 50 mm.

14. A wick snuffer according to any of the preceding claims, wherein said chamber has a length in the range 20 to 40 mm.

15. A wick snuffer according to any of the preceding claims, wherein said gap has a width in the range 1 to 3 mm.

16. A wick snuffer according to any of the preceding claims, further comprising means for adjusting the size of said gap.

17. A wick snuffer substantially as hereinbefore described with reference to the accompanying draw-

ings.

18. A method of snuffing a wick, comprising the steps of:

placing a chamber around a burning wick to extinguish the burning wick through oxygen starvation;
simultaneously placing a plurality of surfaces closely around the base of the exposed wick in the chamber, with a predetermined gap between said surfaces to allow the passage of the wick through said gap; and
moving said surfaces along the length of the exposed wick in the chamber, thereby to clean combustion residues from said wick.

19. A method according to claim 18, when carried out by use of a wick snuffer according to any of claims 1 to 17.

20. A method of snuffing a wick, the method being substantially as hereinbefore described with reference to the accompanying drawings.

21. A method according to claim 18, 19 or 20, wherein the wick is a candlewick.

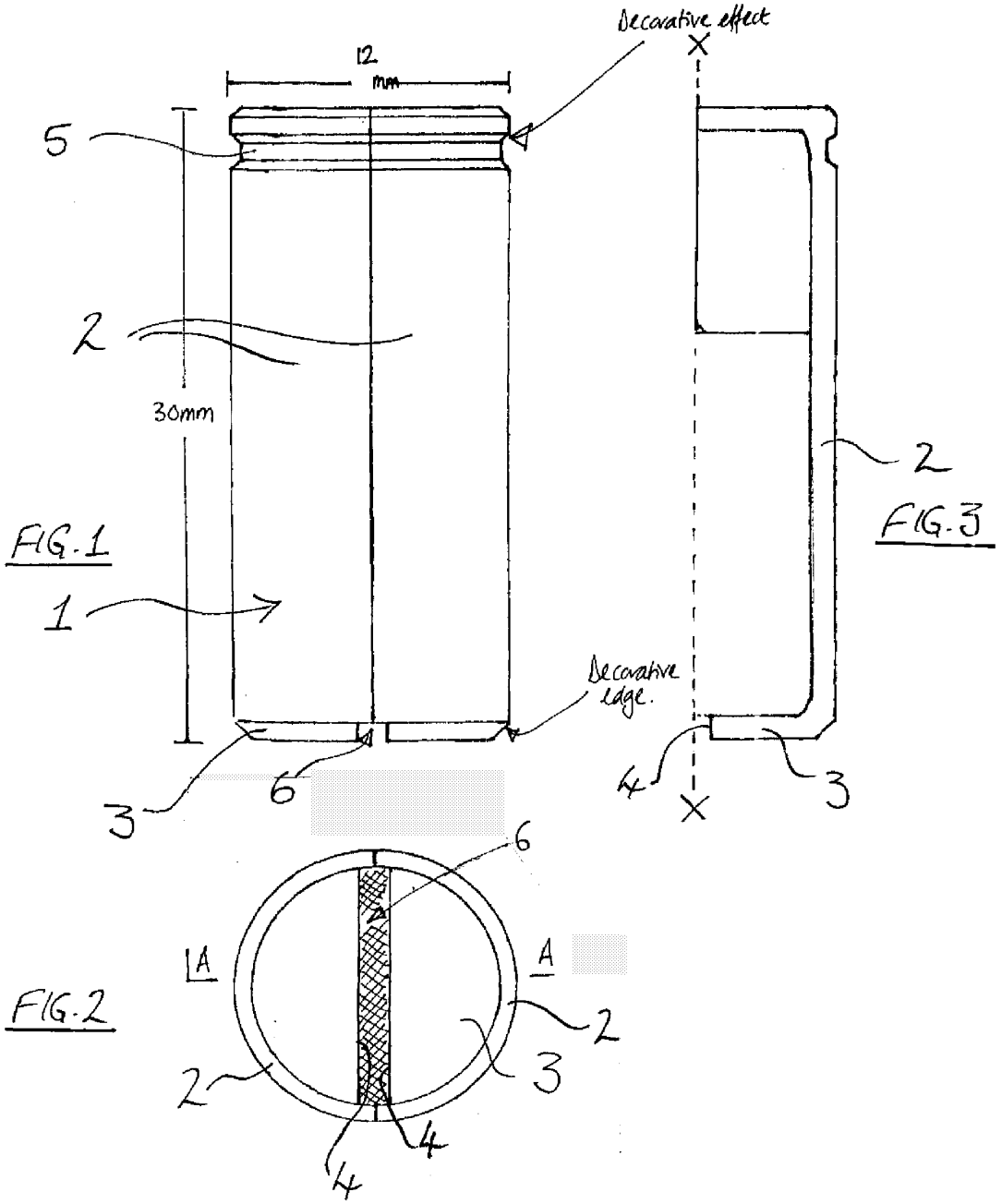


FIG.1

FIG.3

FIG.2

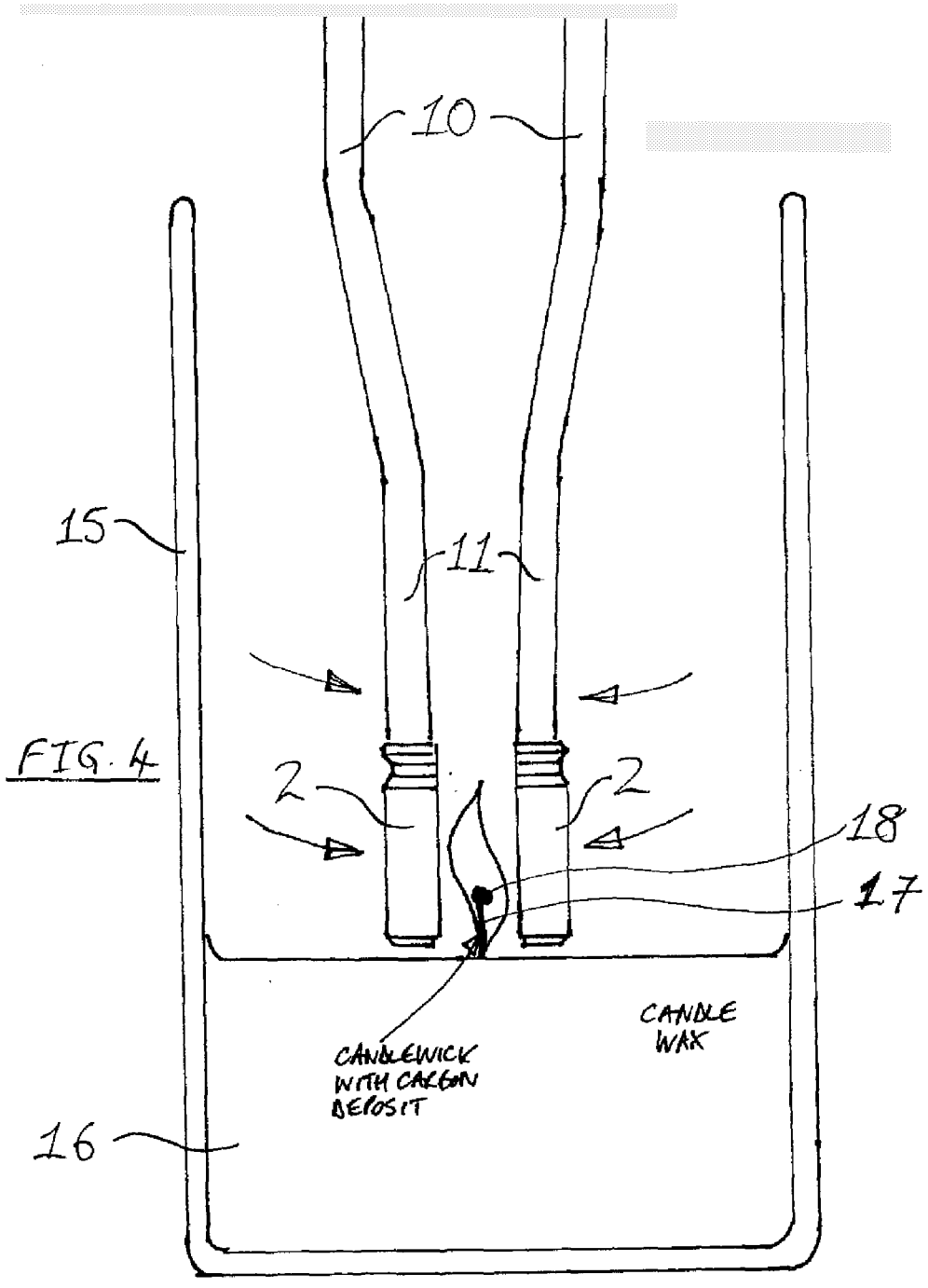
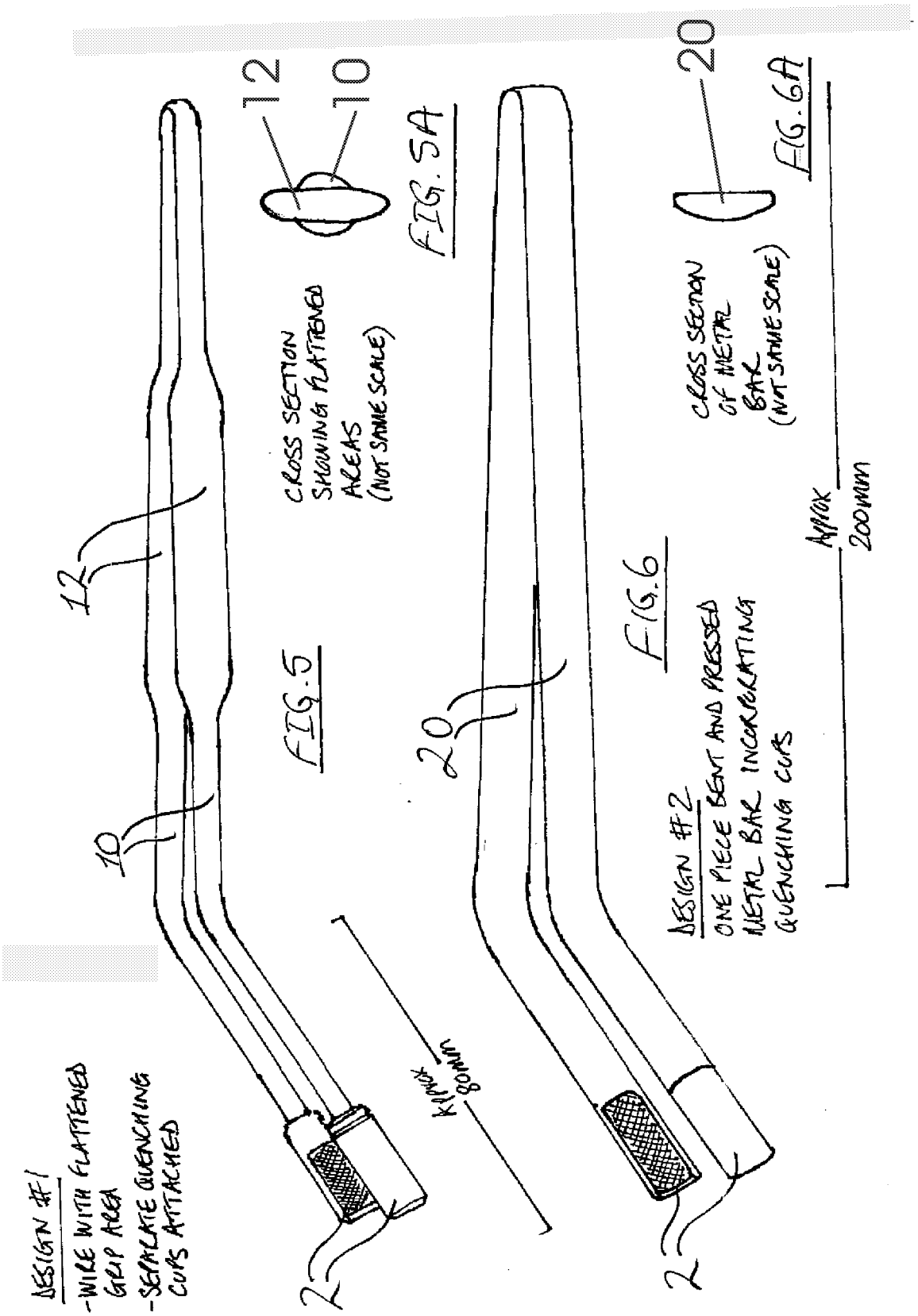

10
15
11
2
2
18
17
CANDLE WAX
CANDLEWICK WITH CARBON DEPOSIT
16

FIG. 4


DESIGN #1
-WIRE WITH FLATTENED GRIP AREA
-SEPARATE QUENCHING CUPS ATTACHED
12
10
2
KINK 60mm
FIG. 5
CROSS SECTION SHOWING FLATTENED AREAS (NOT SAME SCALE)
12
10
FIG. 5A
20
2
FIG. 6
DESIGN #2
ONE PIECE BENT AND PRESSED METAL BAR INCORPORATING QUENCHING CUPS
CROSS SECTION OF METAL BAR (NOT SAME SCALE)
20
FIG. 6A
APPROX 200mm