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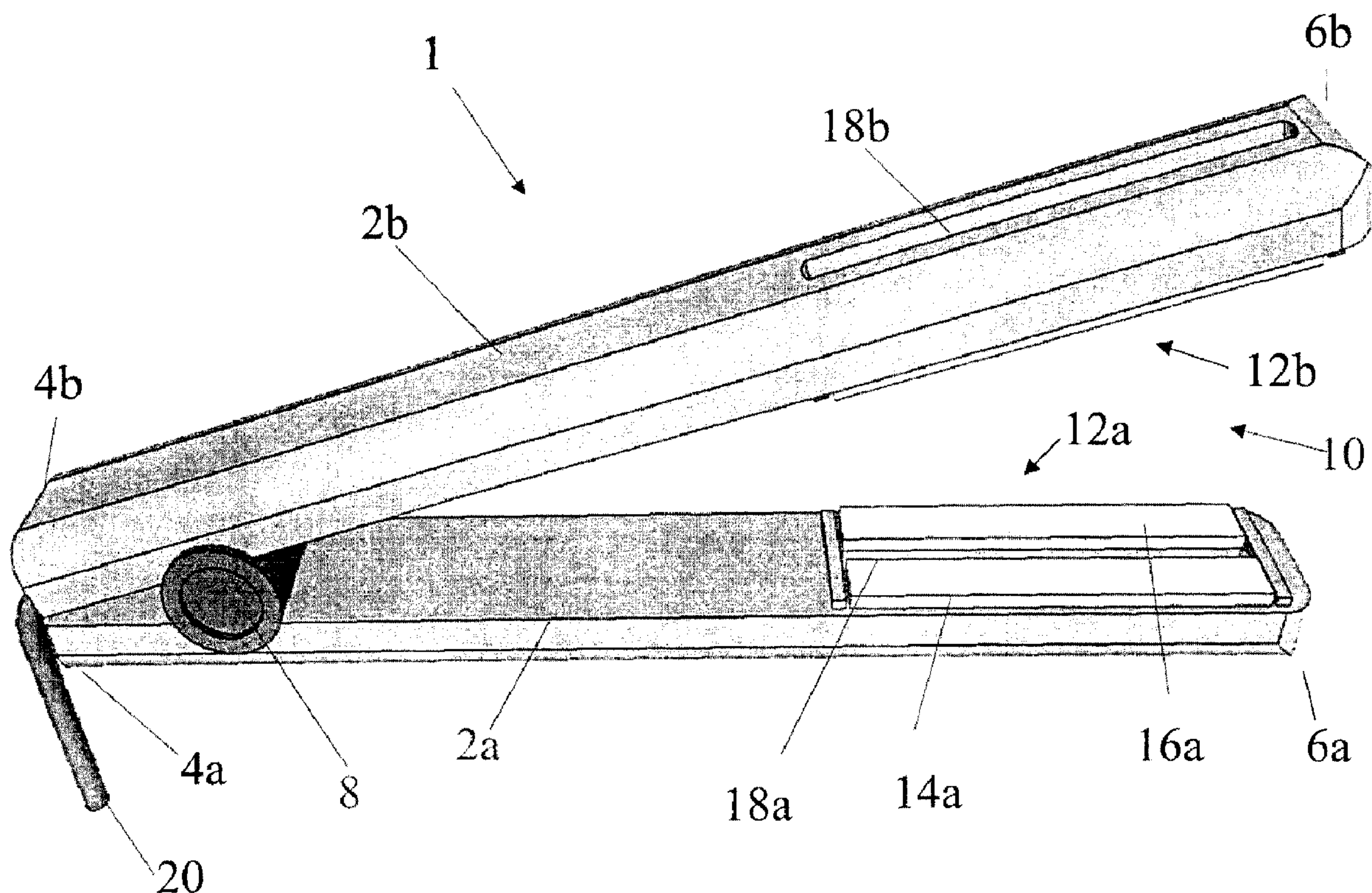
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(54) Titre : APPAREIL DE COIFFAGE
(54) Title: HAIR STYLING APPLIANCE



(57) **Abrégé/Abstract:**

A hair styling appliance used for treating, styling or shaping hair that is comprised of at least two pairs of opposed heatable plates where there is a longitudinally extending lower temperature zone between the adjacent plates of each pair. The zone between the plates allows for increased function of the appliance. The appliance may be a hair straightener, a crimping iron, a curling iron or any other appliance that uses heatable plates or surfaces to treat hair, fibers or fabrics.

HAIR STYLING APPLIANCE

ABSTRACT

A hair styling appliance used for treating, styling or shaping hair that is comprised of at least two pairs of opposed heatable plates where there is a longitudinally extending lower temperature zone between the adjacent plates of each pair. The zone between the plates allows for increased function of the appliance. The appliance may be a hair straightener, a crimping iron, a curling iron or any other appliance that uses heatable plates or surfaces to treat hair, fibers or fabrics.

HAIR STYLING APPLIANCE

FIELD OF INVENTION

The present invention is related to appliances and devices used for treating, styling or shaping hair, fibers or fabrics using heat. The present invention will find particular application in the fields of hand-held hair styling appliances such as straighteners, crimpers, curlers and the like.

BACKGROUND TO THE INVENTION

Hair styling appliances are currently used for straightening, crimping or curling hair in both the professional and domestic domain. These appliances rely on the principle of simultaneously heating the hair and pressing it into a determined shape or to straighten it.

Conventional hair styling appliances are characterized by a pair of opposed heating elements located on the appliance's pivotally hinged arms or clamping members. A typical hair straightener, for example has a heating element placed on each clamping member. The heating elements of conventional hair styling appliances tend to be heated as a single unit. The hair passing between the heating elements is therefore subject to being heated across the entire width of the heating element. This is not necessarily the best way to heat the hair. Better results can be obtained if the hair passing between the heating elements is subjected to alternate heating and cooling for enhanced shaping, styling or forming.

What is needed therefore is a hair appliance with an improved function to expose the hair being heated to temperature differentials.

SUMMARY OF THE INVENTION

To achieve this goal, the present invention is directed towards a hand-held hair styling device consisting of two longitudinally extending arms that move between open and closed positions, a heating area near the end of each arm opposite of the hinge, the heating area comprising at least two heatable plates, a longitudinally extending zone separating adjacent heatable plates, and a power supply; wherein the heatable plates are heated to style or shape hair.

The longitudinally extending zone of the appliance may take the form of a gap between the adjacent heating elements allowing airflow through the gap. Alternatively the longitudinally extending zone may be comprised of a thermally insulating material that remains cooler than the flanking heating elements during operation.

The heatable plates of the appliance may be connected to a control for controlling the temperature of the heatable plates. Preferably all the heatable plates are connected to a single control to ensure the temperature is the same for all of the heatable plates.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the present invention will now be described in greater detail and will be better understood when read in conjunction with the following drawings in which:

FIGURE 1 is a side perspective view of one embodiment of the hair appliance of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

A hair styling appliance based on the invention could be implemented in various ways depending on its purpose. Accordingly, one embodiment of the invention the hair appliance **1** may be a hair straightener, as shown in FIGURE 1. The reference to a hair straightener is merely exemplary, however hair appliance **1** may also be a crimping iron, a curling iron or any other tool or appliance that uses heated elements for the conditioning of fibers.

In one embodiment hair appliance **1** may include two longitudinally extending arms **2a** and **2b**. Arms **2a**, **2b** each have a first end **4a**, **4b** and a second end **6a**, **6b**. Longitudinally extending arms **2a**, **2b** may be connected at their first ends **4a**, **4b** by a hinge or pivot joint **8**. Accordingly arms **2a**, **2b** may pivot and move between an open position as shown in FIGURE 1 and a closed position (not shown).

Alternatively, arms **2a**, **2b** may be pivotally attached to each other nearer the middle, thus dividing arms **2a**, **2b** into a styling part and a grip part (not shown).

Hair styling appliance **1** may include a hair shaping area **10**, which in the present embodiment is comprised of heating areas **12a** and **12b** on each arm **2a**, **2b**. Heating areas **12a**, **12b** are preferably located proximate to ends **6a**, **6b** of arms **2a**, **2b**. Heating areas **12a**, **12b** face each other and extend only partly along the length of arms **2a**, **2b** to create the hair shaping area **10**, which may style or shape the hair when the arms are closed.

In the example shown each heating area **12a**, **12b** may be generally rectangular and may be formed of at least two heatable plates **14a**, **16a** per arm **2a**, **2b**. Alternative

embodiments may have the heatable plates **14a, 16a** present only on one arm **2a, 2b**. When the embodiment is a hair straightener, plates **14a, 16a**, may be generally rectangular with a flat surface. However, different shaped plates **14a, 16a** may be used for different appliances.

At least one longitudinally extending gap **18a, 18b** may run between each set of plates **14a, 16a**. Gap **18a, 18b** may allow hair to cool slightly by not being in constant contact with the plates **14a, 16a** when the appliance **1** is used. Each gap **18a, 18b** may extend through each respective arm **2a, 2b** allowing airflow into the hair shaping mechanism. Alternatively, gap **18a, 18b** may contain a heat sink type of material. The heat sink material may enhance the effect of gap **18a, 18b**.

Plates **14a, 16a** may be made of a conductive thermal material with a surface designed to be placed in contact with hair without risking damage to it. Accordingly, each plate **14a, 16a** could, for example, be polished smooth or coated with enamel, ceramic, polymer, or even a layer of glass or a mineral (e.g. with a low coefficient of friction). Preferably each plate **14a, 16a** is ceramic.

Plates **14a, 16a** may be in thermal contact with a heating mechanism (not shown) provided inside arms **2a, 2b**. The heating mechanism may be implemented in any appropriate manner. The heating mechanism may be connected to a power supply **20** such as a cord connected to an electrical outlet. Alternatively the power could be supplied to hair styling appliance **1** by batteries located within one or both of arms **2a, 2b**.

Hair appliance **1** may include a control mechanism that connects the heating mechanism to the power supply. The control mechanism allows a user to select an appropriate temperature. Similarly, the heating mechanism could also be designed to automatically maintain a predetermined temperature. The implementation of the heating mechanisms and a possible control are well known in the art. Preferably plates **14a, 16a** are all on the same control and the temperature of each plate **14a, 16a** is the same. Alternatively heating plates **14a, 16a** may have individual temperature controls.

To use the appliance **1** arms **2a, 2b** may be opened to introduce a lock of hair into the hair shaping area **10**. Arms **2a, 2b** are then closed and the heat is applied to the lock of hair and appliance **1** may be pulled along the hair to form the desired shape to the hair. As the hair is pulled through the appliance the first pair of plates heat the hair, then the hair is cooled by the gaps and then the second pair of plates again heats the hair. Alternatively the hair may be held in hair shaping area **10** for a time period sufficient to form the desired shape of the hair.

While the invention has been discussed in terms of a hair appliance, its use is not restricted to hair appliances only. It can be useful for the treatment or forming of other natural and synthetic fibers or fibrous materials, as well as fabrics, conditioning or materials formed from fibers or fibrous materials. It's contemplated as well that the heatable elements need not be arranged in opposed pairings. For example heatable elements separated by lower temperature zones can be arranged on or in single surfaces

meant to press the fibers or other material being treated in the manner of a clothes iron or heating press.

Although one embodiment has been described above and illustrated in the figures, those skilled in the art would appreciate that various changes, alterations and substitutions can be made without departing from the essence of the invention. All such changes, alterations and substitutions are believed to fall within the sphere and scope of the invention as defined by the claims appended hereto.

CLAIMS

1. A hair styling apparatus comprising:
two longitudinally extending arms each having a first end and a second end,
a hinge connecting the two arms at their respective first ends
a heating area near the end of the arms opposite of the hinge, the heating area comprising at least two heatable plates,
a longitudinally extending gap separating adjacent heatable plates,
a power supply,
wherein the heatable plates are heated to style or shape hair; and
wherein the arms are capable of moving between open and closed positions.
3. The hair styling apparatus of claim 1, wherein the heating area comprises at least two heatable plates on each of the two longitudinally extending arms.
3. The hair styling apparatus of claim 1 or 2 wherein the longitudinally extending gap extends through the arm.
4. The hair styling apparatus of claim 1, 2 or 3 wherein the longitudinally extending gap is comprised of a heat sink material.
5. The hair styling apparatus of any one of claims 1, to 4 wherein the appliance further comprises at least one control for controlling the temperature of the heatable plates.
6. The hair styling apparatus of claim 5, wherein the heatable plates are connected to a single control and are heated to the same temperature.
7. The hair styling apparatus of any one of claims 1 to 6 wherein the power supply is a cord connected to an electrical outlet.

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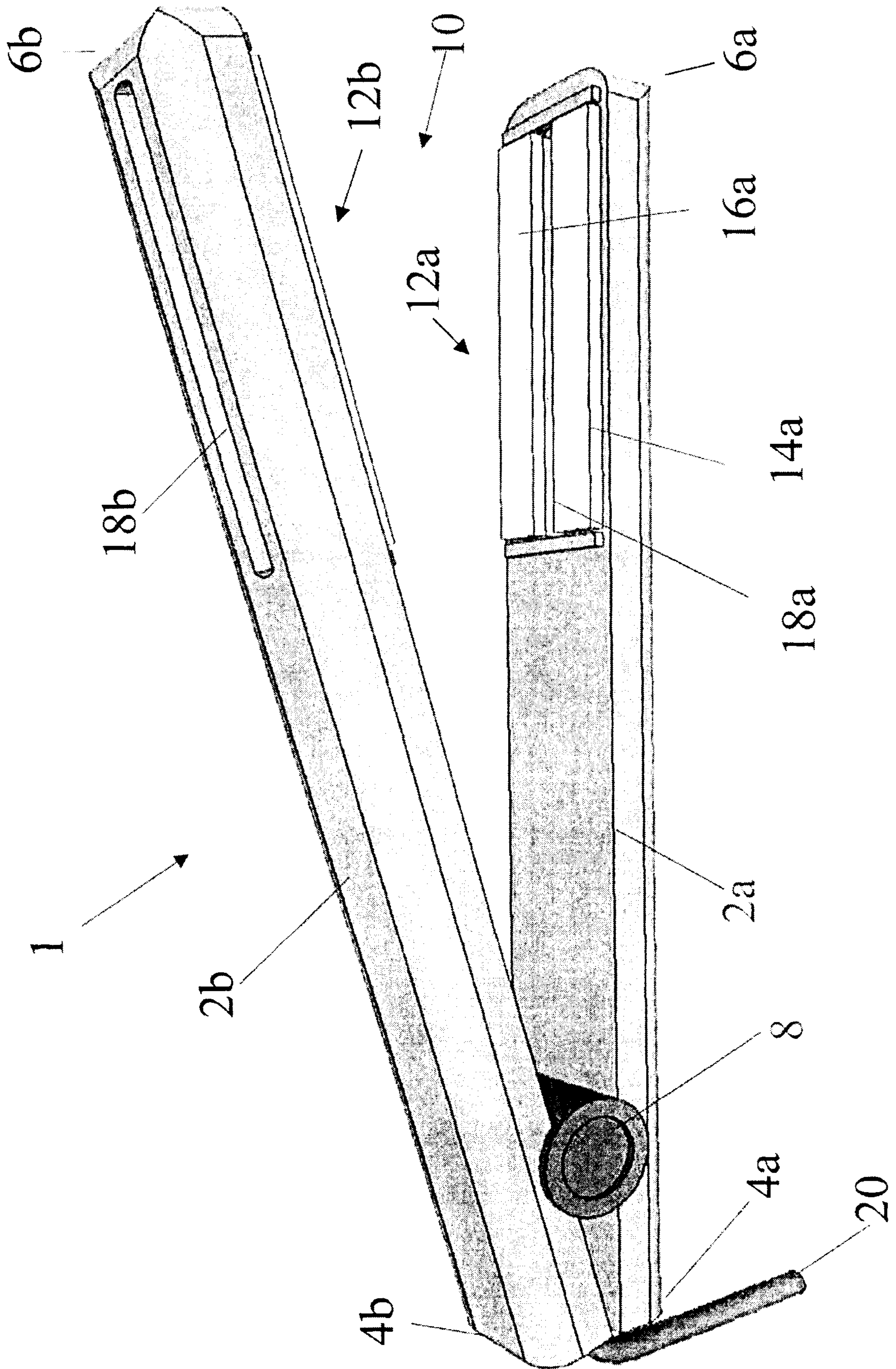


Fig. 1

