



(72) HAGELSTAM, PETER, SE

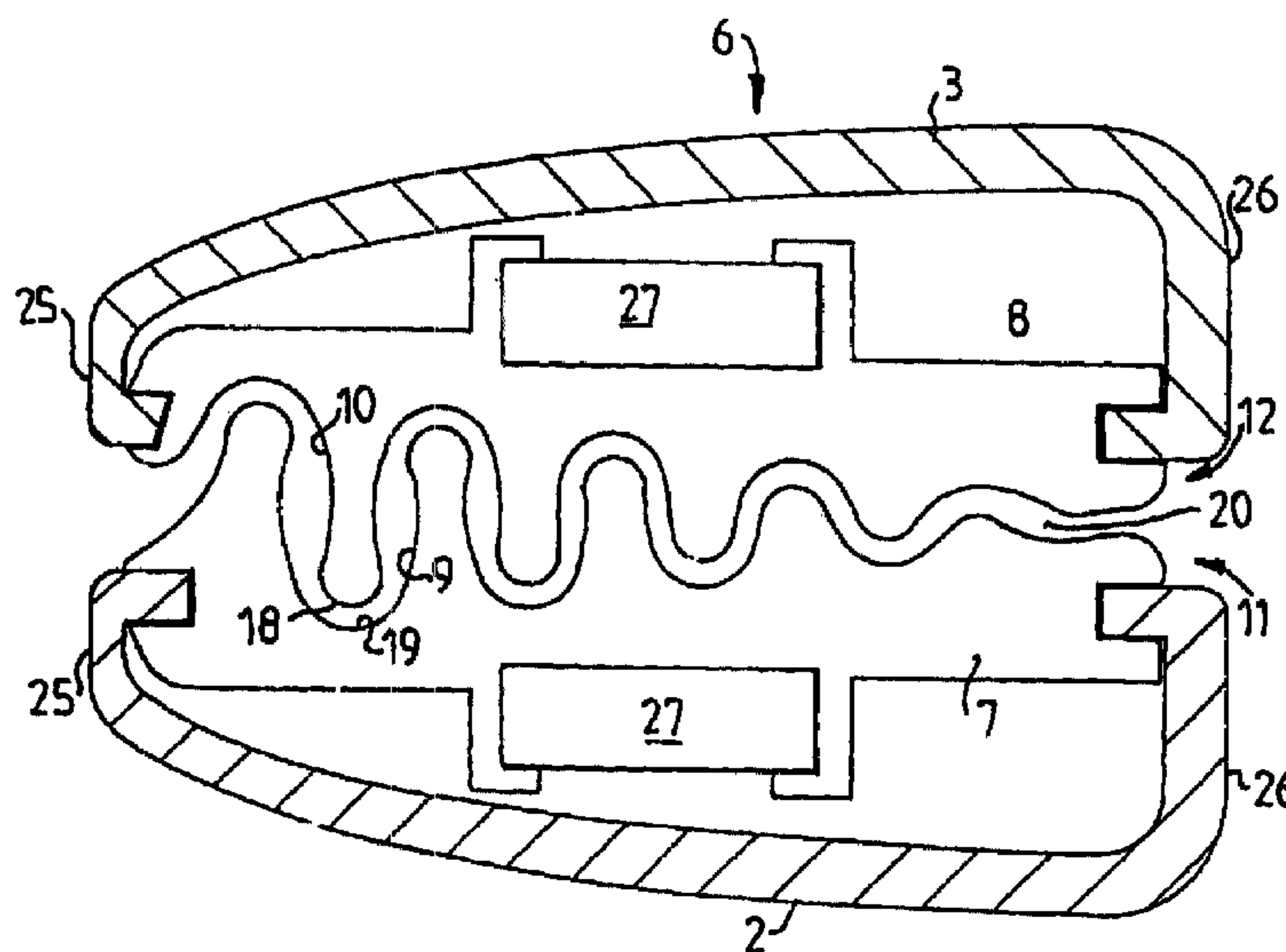
(71) VOLUMASTER AB, SE

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(54) **DISPOSITIF POUR CHEVEUX ET PINCES A FRISER MUNIES
D'UN TEL DISPOSITIF**

(54) **ARRANGEMENT FOR HAIR AND HAIR TONGS PROVIDED
WITH SUCH AN ARRANGEMENT**



(57) L'invention concerne un dispositif (6; 6') et des pinces à friser (1; 1') munies d'un tel dispositif (6; 6') destiné à conférer du volume aux cheveux, une portion des cheveux les plus proches du crâne étant pincée entre les branches (7, 7'; 8, 8') du dispositif, lesquelles ont une forme ondulée (11, 11'; 12, 12') d'amplitude décroissante (a), de telle sorte que cette portion épouse une forme ondulée (11, 11'; 12, 12') ou en boucle, suffisante pour soulever les cheveux, l'aspect des cheveux n'étant, par ailleurs, pas sensiblement changé et l'effet étant conservé jusqu'à ce que les cheveux soient lavés.

(57) The invention proposes a device (6; 6'), and curling tongs (1; 1') having such a device (6; 6'), for creating volume in the hair, by means of a portion of the hair nearest the head being pinched between leg elements (7, 7'; 8, 8') which are provided with a wave shape (11, 11'; 12, 12') of decreasing amplitude (a), so that this portion acquires a wave shape (11, 11'; 12, 12') or curl which is sufficient to lift the hair. The appearance of the hair is not substantially changed otherwise. The effect lasts until the hair is washed.

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(71) Applicant (for all designated States except US): VOLUMAS-
TER AB [SE/SE]; Bolinders Plan 2, S-112 24 Stockholm
(SE).

(72) Inventor; and

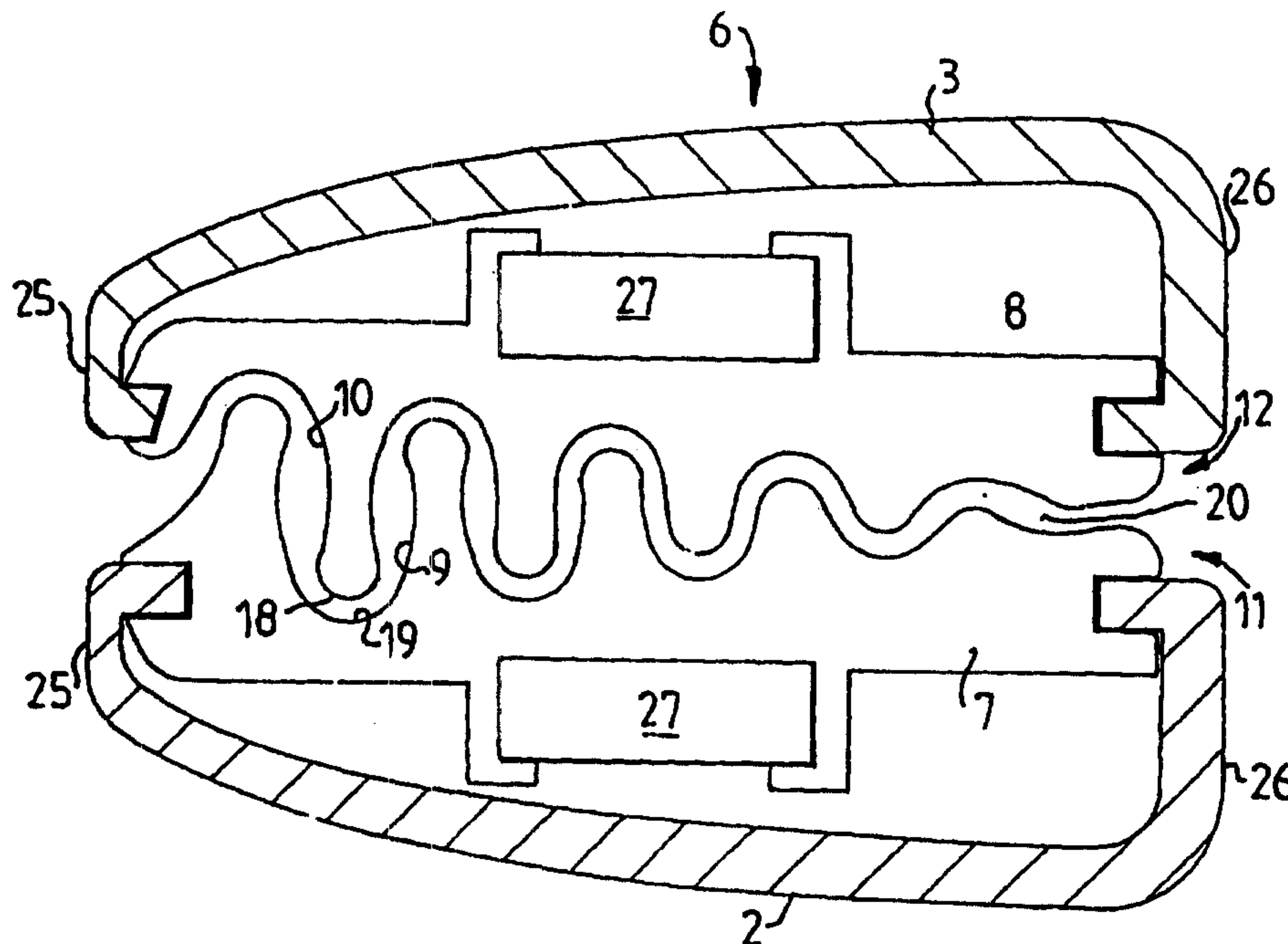
(75) Inventor/Applicant (for US only): HÄGELSTAM, Peter
[SE/SE]; Bolinders Plan 2, S-112 24 Stockholm (SE).(74) Agents: BERG, S., A. et al.; Albihns Patentbyrå Stockholm
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(54) Title: ARRANGEMENT FOR HAIR AND HAIR TONGS PROVIDED WITH SUCH AN ARRANGEMENT



(57) Abstract

The invention proposes a device (6; 6'), and curling tongs (1; 1') having such a device (6; 6'), for creating volume in the hair, by means of a portion of the hair nearest the head being pinched between leg elements (7, 7'; 8, 8') which are provided with a wave shape (11, 11'; 12, 12') of decreasing amplitude (a), so that this portion acquires a wave shape (11, 11'; 12, 12') or curl which is sufficient to lift the hair. The appearance of the hair is not substantially changed otherwise. The effect lasts until the hair is washed.

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Arrangemang for Hair and Hair Tongs Provided with such an Arrangement.

Technical field

5 The present invention relates to a device, and to curling tongs having such a device, for creating volume in hair, especially in straight or wavy hair, without, in so doing, changing other visual aspects of the hair. For example, gentle waves present in the hair
10 will still be visible as such after treatment.

Prior art

 With known techniques it is possible to perm the hair roots in order to lift the hair so that it
15 does not fall so flat around the head. A problem with this known method is that the permed portion grows out and thus remains in the hair, but at the wrong place. In addition, it is a relatively complicated and costly procedure and is difficult to do at home.

20 Devices similar to the one according to the invention are known by terms such as crimping tongs or crimping irons. However, a feature of these known devices is that they curl the hair in such strong wave patterns that the latter are completely noticeable. The
25 hair does indeed acquire greater volume when these are used, but its appearance is not otherwise maintained. The hair becomes tightly curled. EP 0 224 970 describes an example of such a device which is intended to be used to curl the hair or flatten it out by means of the
30 hair being pinched firmly between either two grooved or wave-shaped heated plates or two flat heated plates. If the grooved plates are used, the hair is curled and is thus given greater volume, but its natural wave is lost.

35 US 5 294 777 describes a device for creating lift and volume in hair. This is achieved here by means of a portion of the hair, nearest the head, being pinched firmly between heated plates so that it becomes

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straight and perpendicular to the head. It is not made clear here how long this effect lasts. The device also consists of a grip which has to be heated up in a stand before use.

5 DE-A1 3,606,718 concerns two wave-shaped legs between which the hair is pinched firmly during treatment with perm liquids. The treatment entails a wave pattern in the form of curls being formed in the hair. The wave-shaped legs are placed on the head such
10 that the amplitude of the wave pattern increases in the direction from the head towards the tip of the hair.

Summary

The invention has the object of making
15 available a device for creating volume in hair, without the hair losing its natural wave.

Another object of the invention is to make available a device for creating volume in hair which is inexpensive and easy to use and whose effect remains
20 until the next time the hair becomes wet, for example when the hair is washed.

These and other objects are achieved by means of the device according to the present invention, which comprises first and second heatable leg elements which
25 are each provided with a surface for giving off heat to the hair and thereby shaping the hair, which leg elements are provided with a wave shape which extends with decreasing amplitude across the surfaces. These objects are also achieved with curling tongs which
30 comprise first and second legs which are connected to each other via a hinge, which curling tongs are provided with the said device so that the first leg element is arranged on the first leg and the second leg element is arranged on the second leg.

35 The invention thus affords a device, and curling tongs having such a device, for creating volume in the hair by means of the fact that a portion of the hair nearest the head is pinched between heated leg

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elements so that this portion is given a curl or wave which is sufficient to lift the hair. The appearance of the hair is not otherwise affected. The effect lasts until the hair becomes wet and it can be done easily at home without the help of a hairdresser.

Brief description of the figures

The invention will be explained in greater detail below with reference to the attached drawings which show various embodiments.

Fig. 1 shows curling tongs according to a first embodiment of the invention;

Fig. 2 shows a leg seen from the centre of the curling tongs according to Fig. 1;

Fig. 3 shows the leg in Fig. 2, seen from the outside of the curling tongs;

Fig. 4 shows a section A-A through the leg in Fig. 2;

Fig. 5 shows a section, corresponding to that in Fig. 4, of a device according to the first embodiment of the invention;

Fig. 6 shows a perspective view of the leg element according to a second embodiment of the invention;

Fig. 7 shows a third embodiment of a device and curling tongs according to the invention.

Detailed description of embodiments

Figure 1 shows a side view of curling tongs 1 according to the invention, comprising first and second legs 2, 3 which are joined at a hinge 4 so that the legs 2, 3 can pivot about an axis 5 in the hinge 4. The curling tongs 1 are provided with a device 6 according to the invention. The device 6 comprises first and second heatable leg elements 7, 8. The first leg element 7 is arranged on the first leg 2 and the second leg element 8 is arranged on the second leg 3. On the surfaces 9, 10 of the leg elements 7, 8 facing each

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other, there is a wave shape 11, 12 which will be described in more detail below. A connection 13 is provided for electric current with which the leg elements 7, 8 can be heated. This heating can continue during the actual use of the curling tongs 1. The heating is also preferably controlled by a thermostat. When the leg elements 7, 8 of the curling tongs 1 are brought together, the wave shapes 11, 12 fit into each other. The legs 2, 3 and leg elements 7, 8 can consist of two separate parts which are joined by a suitable securing means which will be explained below. The legs 2, 3 and leg elements 7, 8 can alternatively be designed in one and the same piece. The curling tongs 1 can also be provided with a spring (not shown) which acts with an opening force on the legs 2, 3 of the curling tongs 1. The leg elements 7, 8 and also the legs 2, 3 can be curved in their longitudinal direction in order thereby to follow the shape of the head.

Fig. 2 shows the first leg 2 seen from the side which faces the second leg 3. It will be seen from Fig. 2 that the waves 11 extend in a direction essentially parallel to the axis 5 of the hinge 4, about which axis 5 the legs 2, 3 can pivot. Fig. 3 shows the first leg 2 seen from the side which faces away from the second leg 3.

Fig. 4 shows a section along the line A-A in Fig. 2 according to a preferred embodiment of the invention. The leg element 7 is provided with a wave shape 11 which extends with decreasing amplitude (a) across the surface 9. Each leg element 7, 8 comprises first and second end edges 14, 15. The wave shape 11 has its greatest amplitude at the first end edge 14 and essentially no amplitude at the second end edge 15. The distance x between the first and second end edges 14, 15 lies in the range of 20 - 80 mm, preferably 30 - 60 mm. The amplitude (a) of the wave 11 with greatest amplitude (a) lies in the range of 1 - 10 mm, preferably 2 - 7 mm. The distance between two wave

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peaks 18, i.e. the wave length λ , lies in the range of 3 - 15 mm, preferably 5 - 10 mm. It is possible for the wave length λ to vary along the surfaces 9, 10 of the leg elements 7, 8.

5 According to the embodiment shown in Fig. 4, the leg element 7 is provided, at the first and second end edges 14, 15, with grooves 23 which extend along each respective end edge 14, 15. The legs 2, 3 of the curling tongs 1 are provided with flanges 24 which
10 extend into the grooves 23 of the leg elements 7, 8. The leg elements 7, 8 are fixed on the legs 2, 3 by means of the grooves 23 and flanges 24. The legs 2, 3 preferably extend beyond the end edges 14, 15 of the leg elements 7, 8, for which reason the width of the
15 legs 2, 3 is greater than the distance x. This means that first and second end areas 25, 26 are formed in the legs 2, 3. The first end area 25 of the legs 2, 3 thus comes to meet the first end edge 14 of the leg elements 7, 8. The legs 2, 3 are preferably made of a
20 heat-insulating material such as plastic, which means that when the first end edge 14 of the respective leg element 7, 8 is placed near the head, the first end area 25 of the respective leg 2, 3 will ensure that no discomfort in the form of high temperature will be
25 experienced by the person being treated with the curling tongs 1. The legs 2, 3 can be designed in such a way that the leg elements 7, 8 can be released from the legs 2, 3 in a simple manoeuvre. The leg elements 7, 8 can thus be replaced with other leg elements 7, 8
30 having different dimensions.

Fig. 4 also shows how a heat-generating element 27 is arranged on the leg element 7. A heat-generating element 27 is preferably arranged on both the first and second leg elements 7, 8. The heat-generating element
35 27 can be designed as a resistor which is fed with electricity.

The device according to the preferred embodiment is intended to be used on that portion of

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the hair which is nearest the head. When the leg elements 7, 8 are heated, the device 6 is held to the head and a tuft of hair is pinched together between the heated leg elements 7, 8. The leg elements 7, 8 must reach nearest the head so that only the innermost portion of each strand of hair is treated. That part of the leg elements 7, 8 where the waves 11, 12 have their greatest amplitude (a) must be nearest the head. In other words, the first end edge 14 must be placed near the head. When the hair is pressed together between the heated wave-shaped 11, 12 surfaces 9, 10, a wave pattern is formed in the hair nearest the head, which pattern remains when the device and the curling tongs 1 are thereafter removed. The amplitude of the wave pattern will decrease along the length of the hair strand in the direction towards its tip. If this treatment is repeated for all the hair, in the portion nearest the head, the waves or curls in the hair will cause the hair to lift and the hair will be given greater volume than it had before the treatment. The natural appearance of the hair is otherwise largely unaffected, i.e. natural wave and the like remains. The wave 11 with the greatest amplitude on the first leg element 7 is designed in such a way, and cooperates in such a way with the wave 11 nearest the first end edge 14 of the second leg element 8, that the hair is guided between the leg elements 7, 8 such that the hair nearest the scalp does not come to slope in relation to the scalp.

The above-described method for creating volume in hair is simple to carry out, making the device 6 and the curling tongs 1 according to the invention suitable for both professional use and for use in the home. Furthermore the effect lasts until the hair becomes wet, after which it is easy to repeat the procedure.

Fig. 5 shows a section through the device 6 according to the invention when the leg elements 7, 8 are brought together. It will be seen from the figure

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that the wave shapes 11, 12 of the leg elements 7, 8 essentially complement each other, so that when the surfaces 9, 10 of the leg elements 7, 8 adjoin each other, the wave peaks 18 of the one leg element 7, 8 extend into the wave valleys 19 of the other leg element 7, 8, and vice versa. When the leg elements 7, 8 are arranged on the legs 2, 3 of the curling tongs 1, a gap 20 is preferably formed between the leg elements 7, 8 when the legs 2, 3 of the curling tongs 1 are moved in the direction towards each other. At least that part of the waves 11 with the greatest amplitude (a) comprises inwardly curved surfaces so that a waist 17 is formed at the wave peak 18 in the area between the wave peak 18 and the wave valley 19. The waist 17 allows a play or clearance to form between the surfaces 9, 10 of the leg elements 7, 8, which play or clearance ensures that the pulling force of the hair reduces when the hair is being treated with the device.

Fig. 6 shows a perspective view of the device 6 according to a second embodiment of the invention. What distinguishes this embodiment from the first embodiment is that a heat-reducing lip 16 is arranged on the first end edge 14 of the second leg element 8. The first end edges 14 of the respective leg element will be placed near the head so that the heat-reducing lips will bear against or be at a short distance from the head. The temperature of the heat-reducing lips 16 is low by comparison with other parts of the leg element 7, 8, which means that no discomfort in the form of high temperature will be experienced by the person being treated with the curling tongs 1.

Fig. 7 shows a device 6' and curling tongs 1' according to a third embodiment of the invention. The surfaces 9', 10' of the leg elements 7', 8' are curved so that when the legs 2', 3' of the curling tongs 1' are brought together, the waves 11', 12' with greatest amplitude (a) of the respective leg elements 7', 8' first engage in each other, after which the remaining

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waves 11', 12' then engage successively in each other. According to this embodiment, the legs 2', 3' of the curling tongs 1' are connected to each other via a hinge which allows the leg elements 7', 8' or the legs
5 2', 3' together with the leg elements 7', 8' to be turned about a longitudinal axis 21', 22' which essentially coincides with the longitudinal extent of the legs 2', 3'.

It is conceivable for the leg elements 7, 7';
10 8, 8' shown in the first and second embodiments to be combined with each other so that an essentially plane leg element 7, 8 according to the first embodiment can be arranged on one of the legs 2, 2'; 3, 3' of the curling tongs 1, 1' and a curved leg element 7', 8'
15 according to the second embodiment can be arranged on the other legs 2, 2'; 3, 3' of the curling tong 1, 1'.

Patent Claims

1. Device for hair, comprising first and second
5 heatable leg elements (7, 7'; 8, 8') which are each
provided with a surface (9, 9'; 10, 10') for giving off
heat to the hair and thereby shaping the hair,
characterized in that the leg elements (7, 7'; 8, 8')
are provided with a wave shape (11, 11'; 12, 12') which
10 extends with decreasing amplitude (a) across the
surfaces (9, 9'; 10, 10'), in that the wave shapes
(11, 11'; 12, 12') of the leg elements (7, 7'; 8, 8')
essentially complement each other so that when the
surfaces (9, 9'; 10, 10') of the leg elements (7, 7';
15 8, 8') adjoin each other, wave peaks (18) of one leg
element (7, 7'; 8, 8') extend into wave valleys (19) of
the other leg element (7, 7'; 8, 8'), and vice versa,
in that each leg element (7, 7'; 8, 8') comprises first
and second end edges (14, 15), and in that the wave
20 shape (11, 11'; 12, 12') has its greatest amplitude (a)
at the first end edge (14) and no amplitude (a) at the
other end edge (15), which wave shape (11, 11';
12, 12') of the leg elements (7, 7'; 8, 8') forms a
wave pattern in the hair nearest the head, the
25 amplitude of the wave pattern decreasing along the
length of the hair in the direction towards its tip.

2. Device according to Claim 1, characterized in
that heat-reducing lips (16) are arranged at the first
end edge (14).

30 3. Device according to Claim 1 or 2, characterized
in that the distance (x) between the first and second
end edges (14, 15) lies in the range of 20 - 80 mm,
preferably 30 - 60 mm.

4. Device according to any of the preceding
35 claims, characterized in that at least that part of the
waves (11, 11'; 12, 12') with the greatest amplitude
(a) comprises inwardly curved surfaces, so that a waist
(17) is formed at the wave peak (18), which waist (17)

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allows a clearance or play to form between the surfaces (9, 9'; 10, 10') of the leg elements (7, 7'; 8, 8').

5. Device according to any of the preceding claims, characterized in that the amplitude (a) of the wave (11, 11'; 12, 12') with the greatest amplitude (a) lies in the range of 1 - 10 mm, preferably 2 - 7 mm.

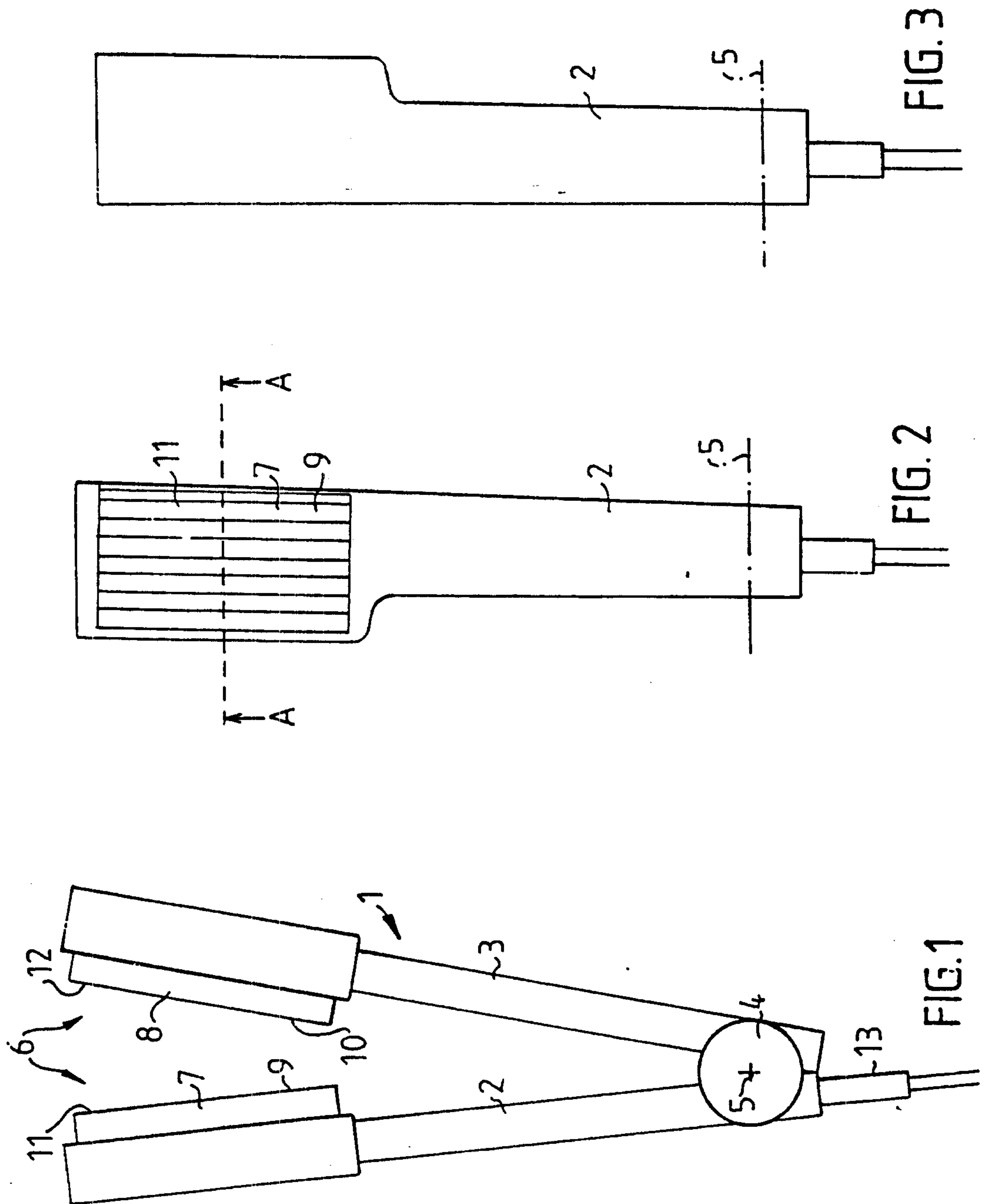
6. Device according to any of the preceding claims, characterized in that the distance (λ) between two wave peaks (18) lies in the range of 3 - 15 mm, preferably 5 - 10 mm.

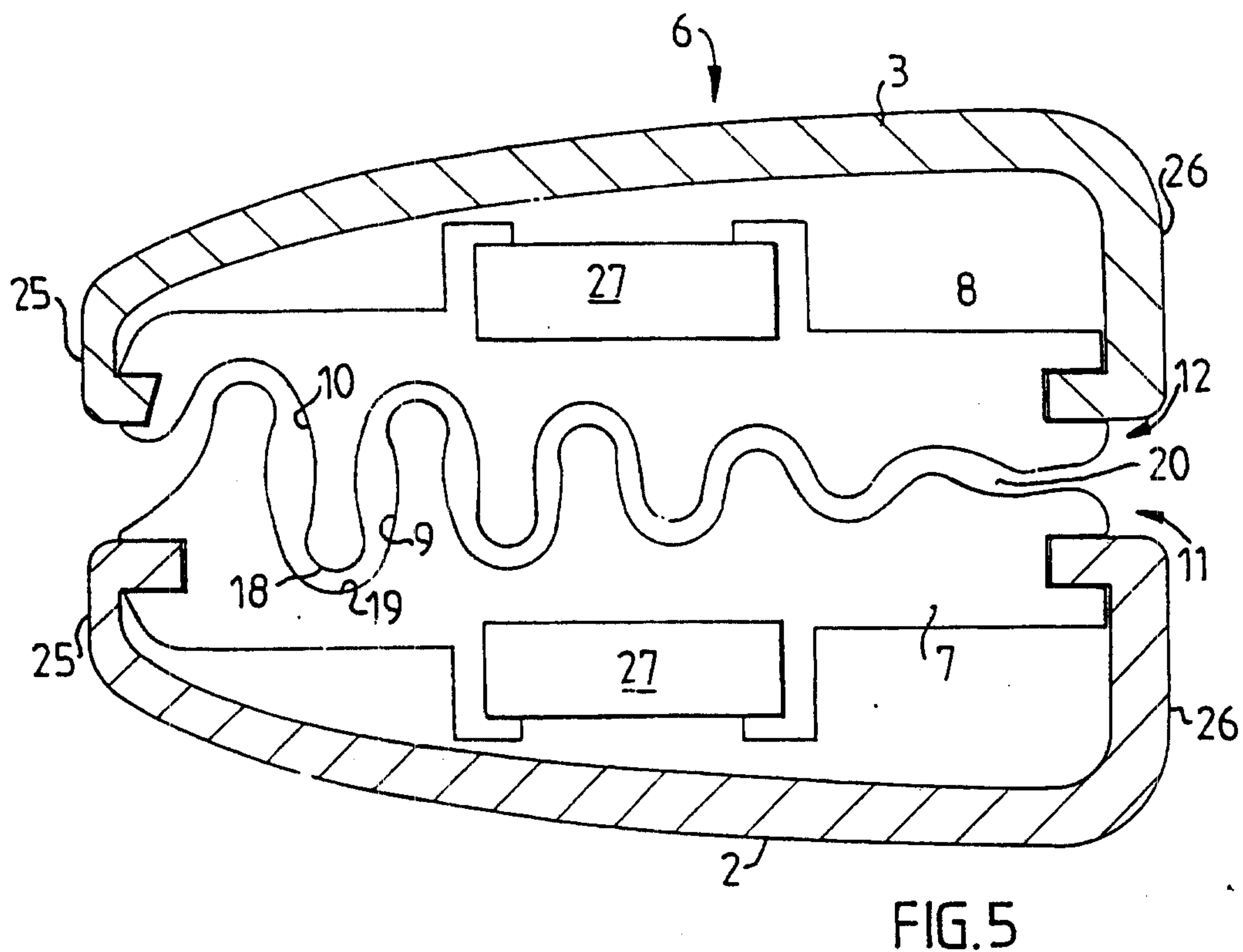
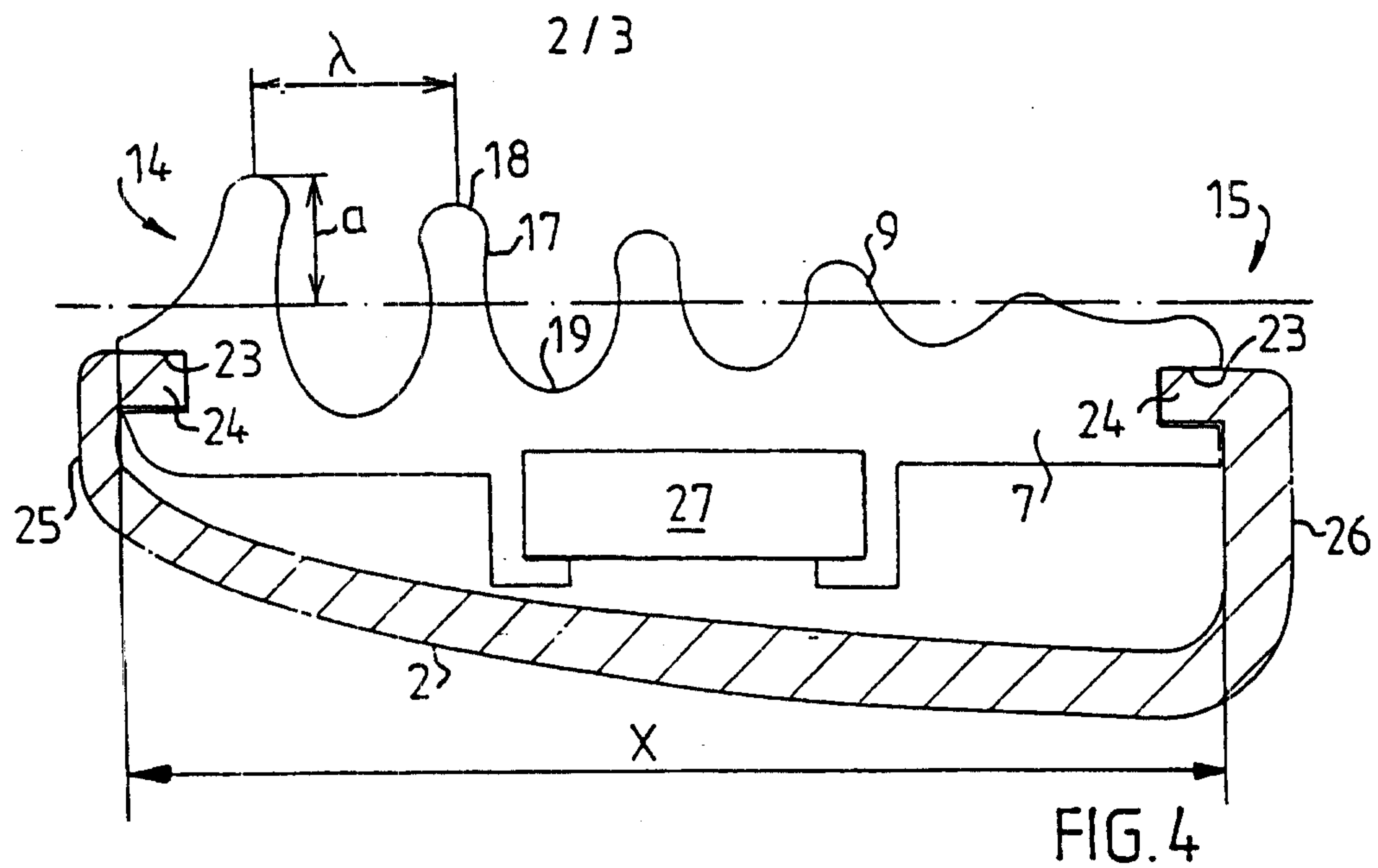
7. Curling tongs, comprising first and second legs (2, 2'; 3, 3;) which are connected to each other via a hinge (4), characterized in that the curling tongs (1; 1') are provided with a device (6, 6') according to Claim 1, so that the first leg element (7; 7') is arranged on the first leg (2; 2') and the second leg element (8; 8') is arranged on the second leg (3; 3').

8. Curling tongs according to Claim 7, characterized in that the waves (11, 11'; 12, 12') extend in a direction essentially parallel to an axis (5) of the hinge (4), about which axis (5) the legs (2, 2'; 3, 3') can pivot.

9. Curling tongs according to Claim 7 or 8, characterized in that the surfaces (9', 10') of the leg elements (7', 8') are curved, so that when the legs (2', 3') of the tongs (1') are brought together, the waves (11', 12') with greatest amplitude (a) of the respective leg elements (7', 8') first engage in each other, after which the remaining waves (11', 12') the engage successively in each other.

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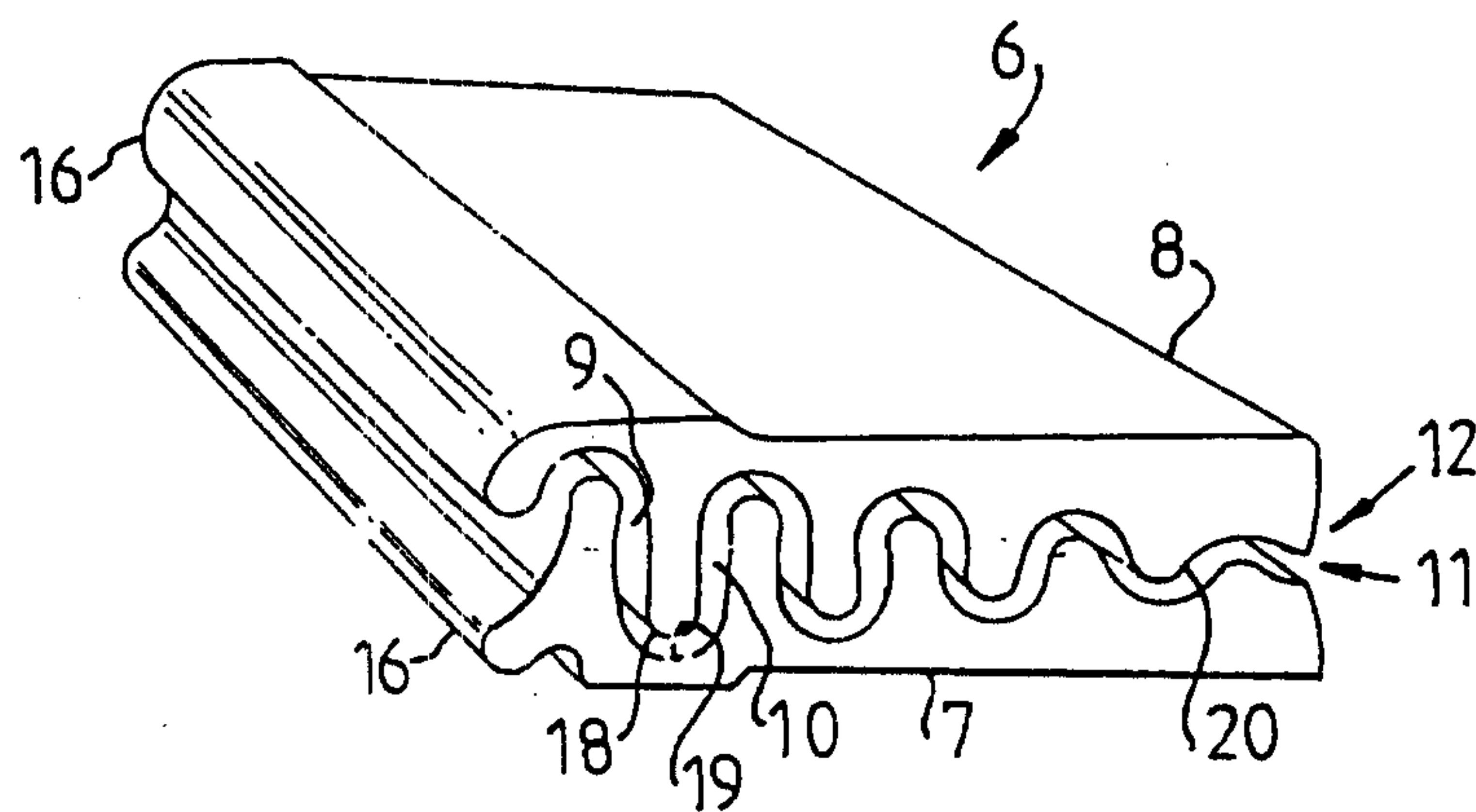


FIG. 6

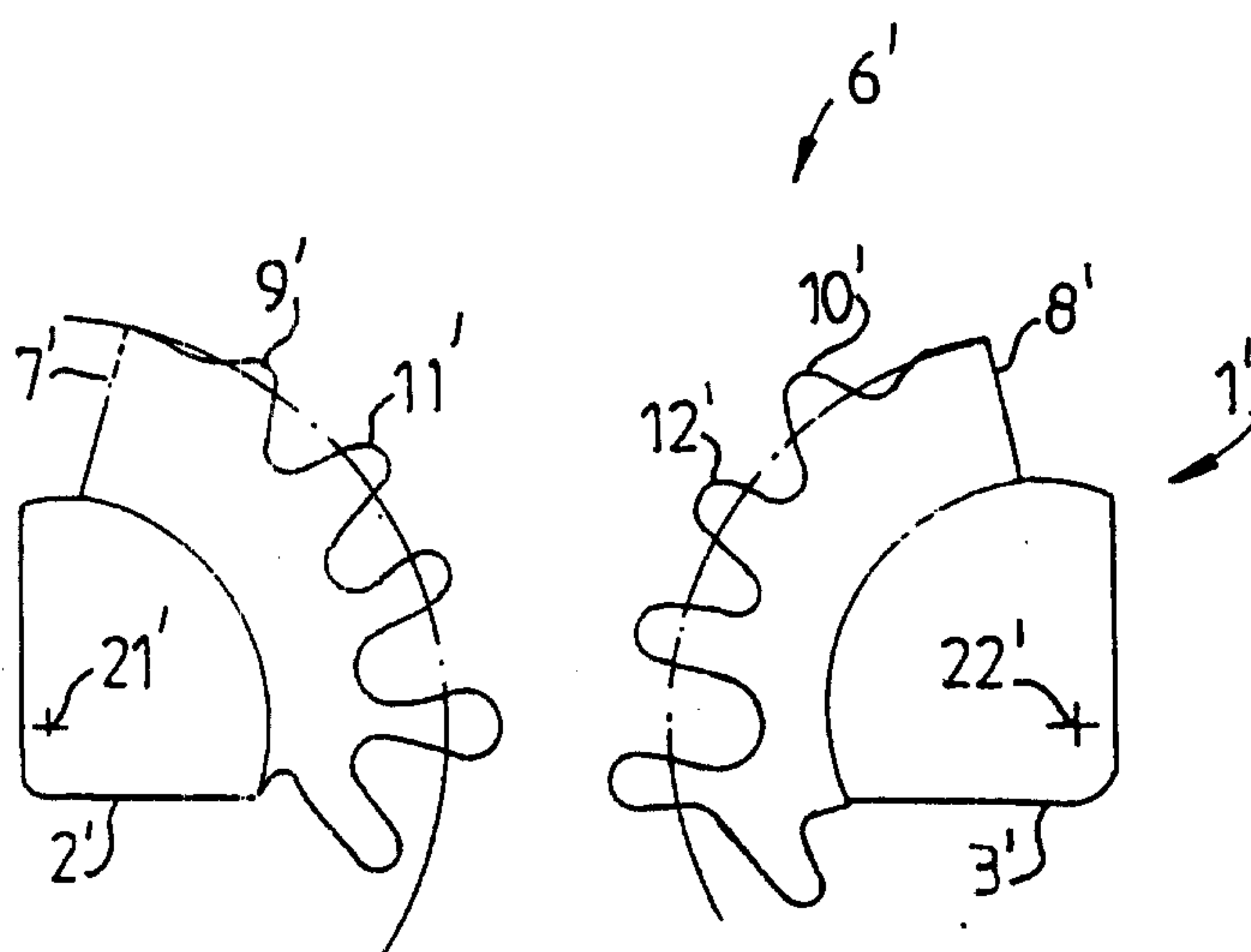


FIG. 7

