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(54) **HAIR STRAIGHTENING AND CURLING DEVICE**

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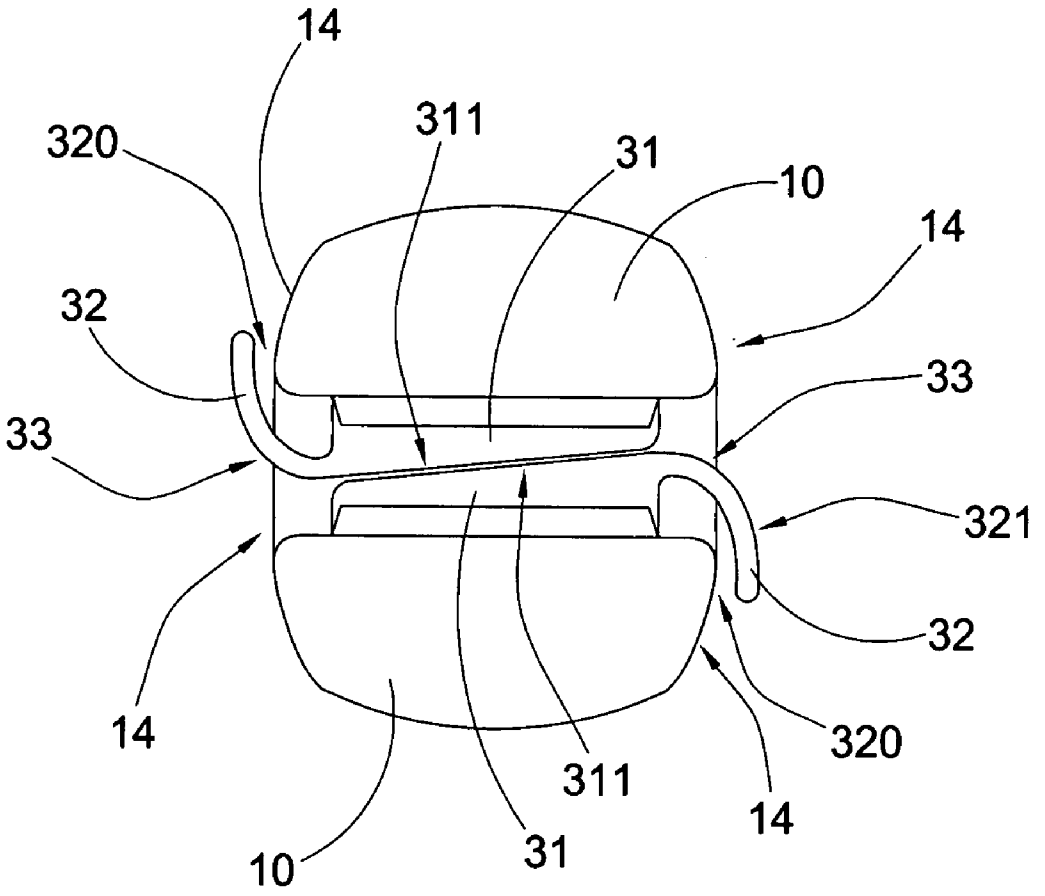
(57) **ABSTRACT**

A hair straightening and curling device includes two handle arms pivotally extended from a pivot point and two heated plates provided at end portions of the handle arms respectively, wherein each of the heated plates includes a plate body provided at an inner side of the handle arm and a side wing sidewardly extended from the plate body to form a L-shaped plate structure. The side wing is extended out of the sidewall of the handle arm such that the heated plates are adapted for not only straightening a lock of hair when the lock of hair only contacts and sandwiches between the plate bodies but also for curling the lock of hair when the lock of hair further contacts with the side wings.



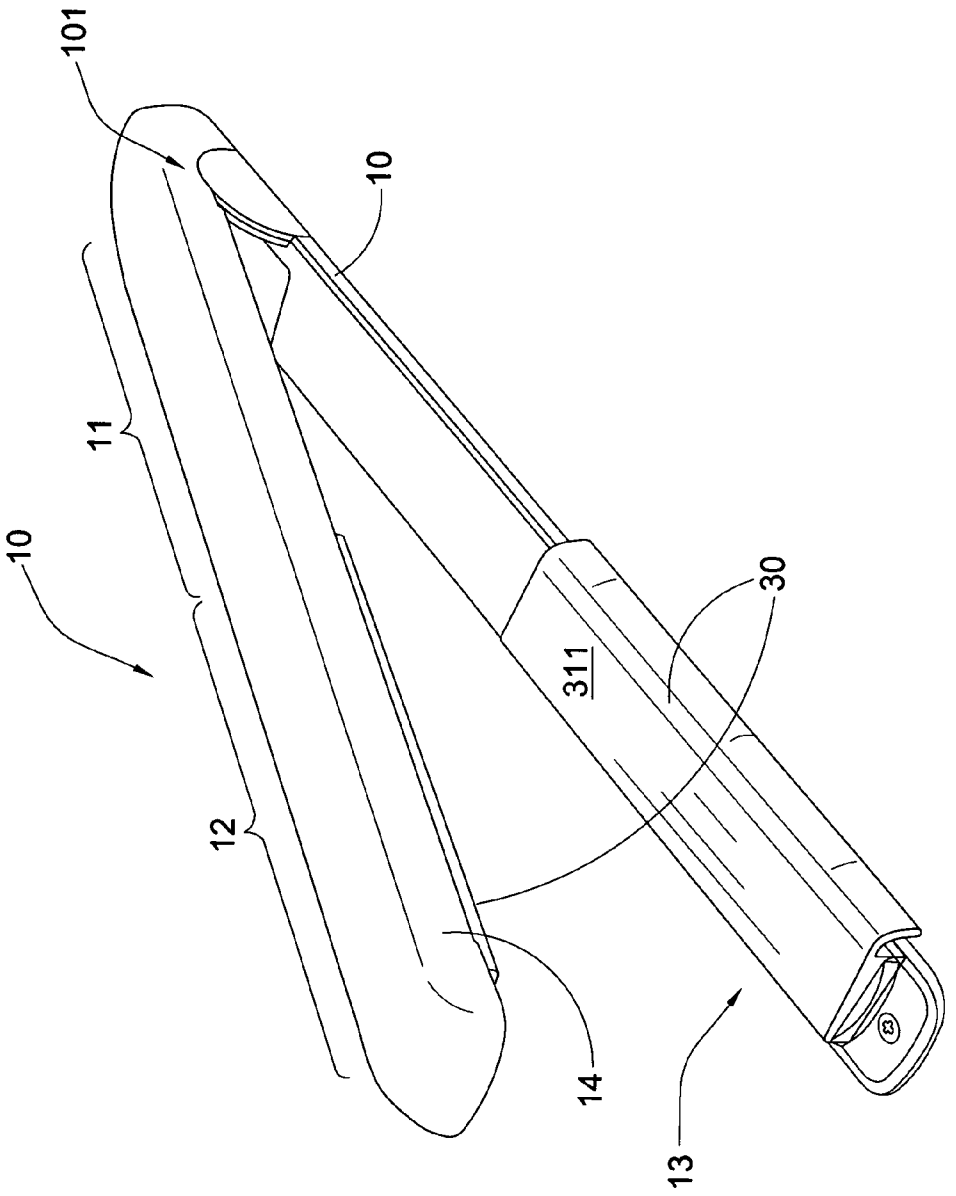


FIG.1

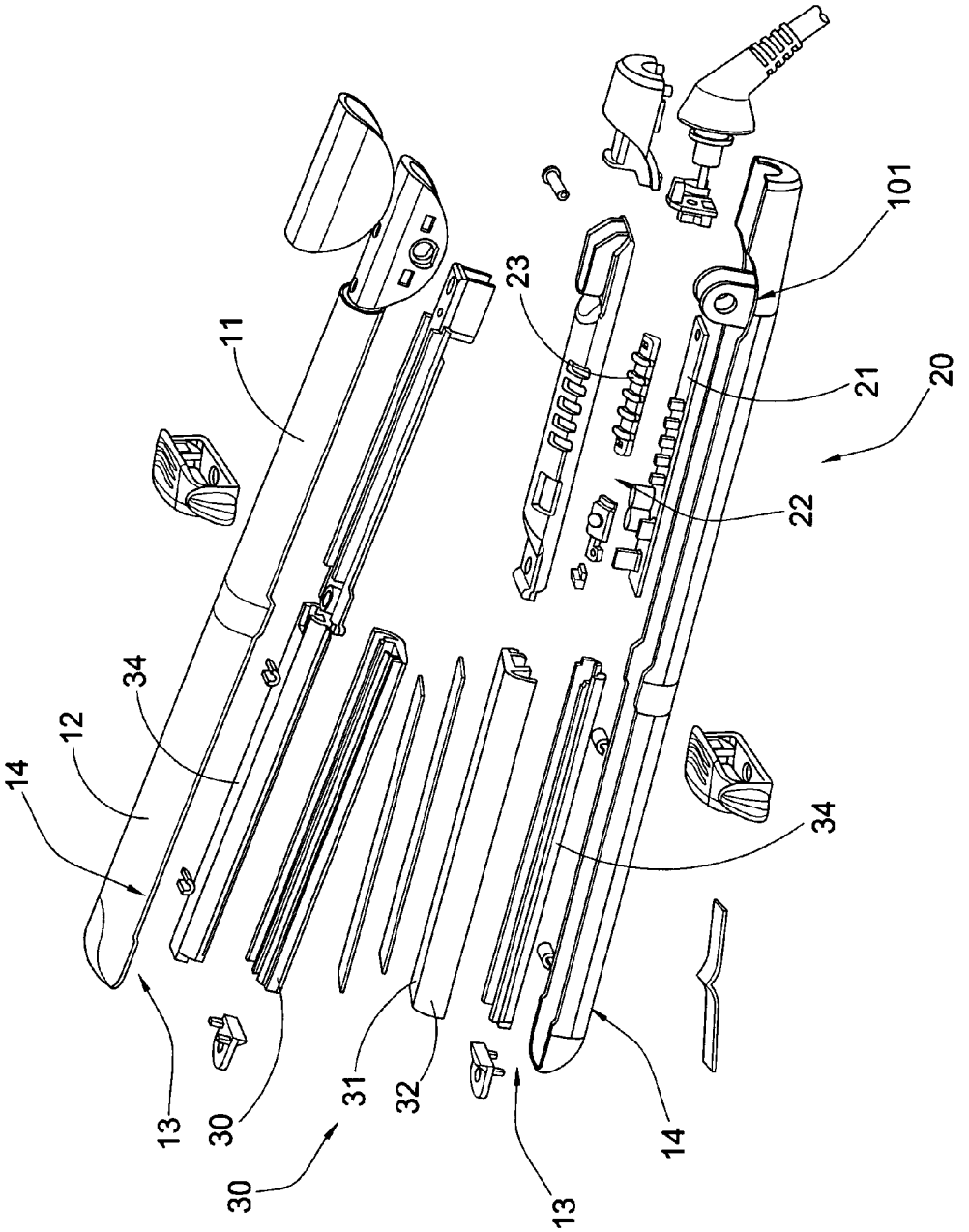


FIG.2

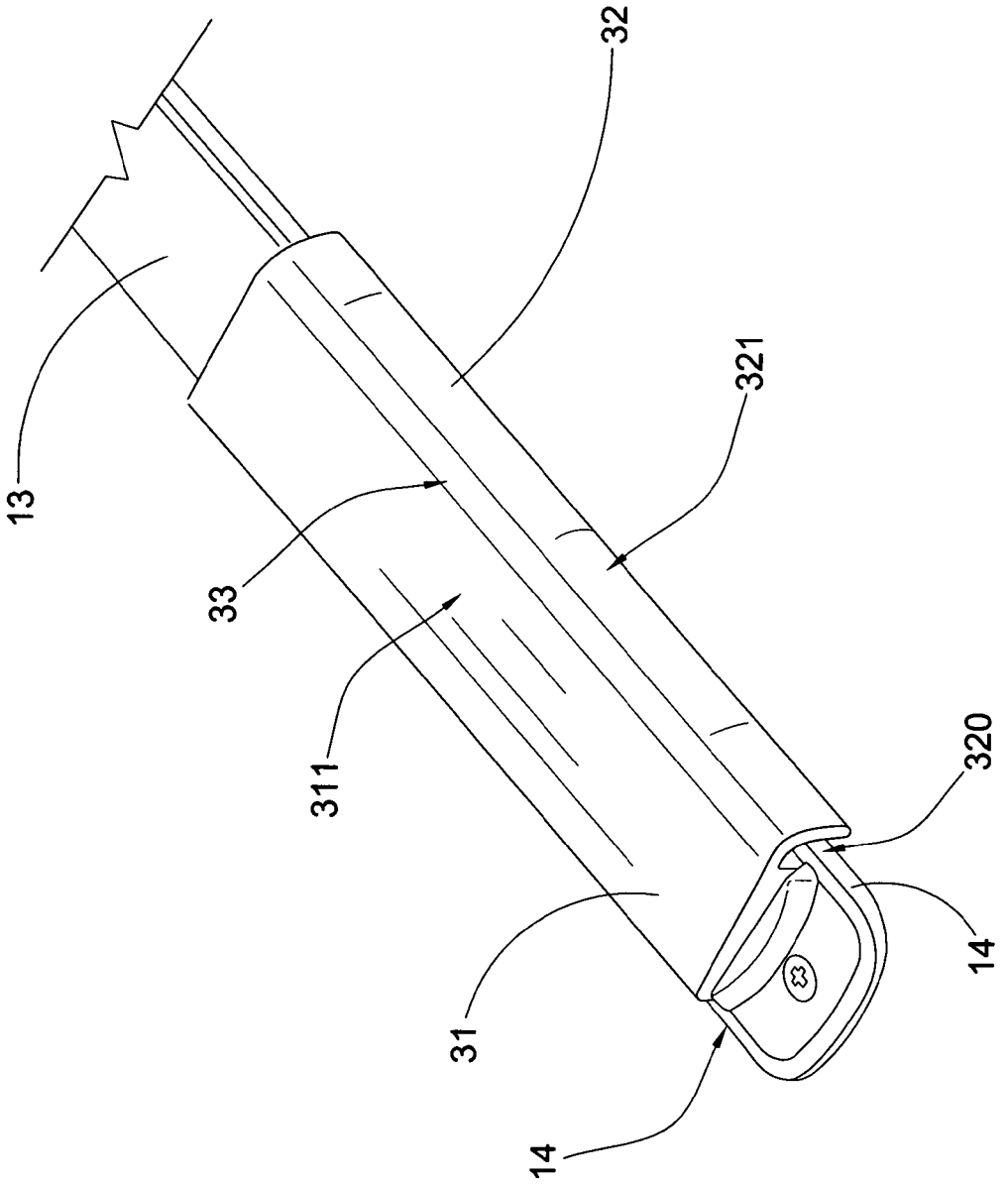


FIG.3

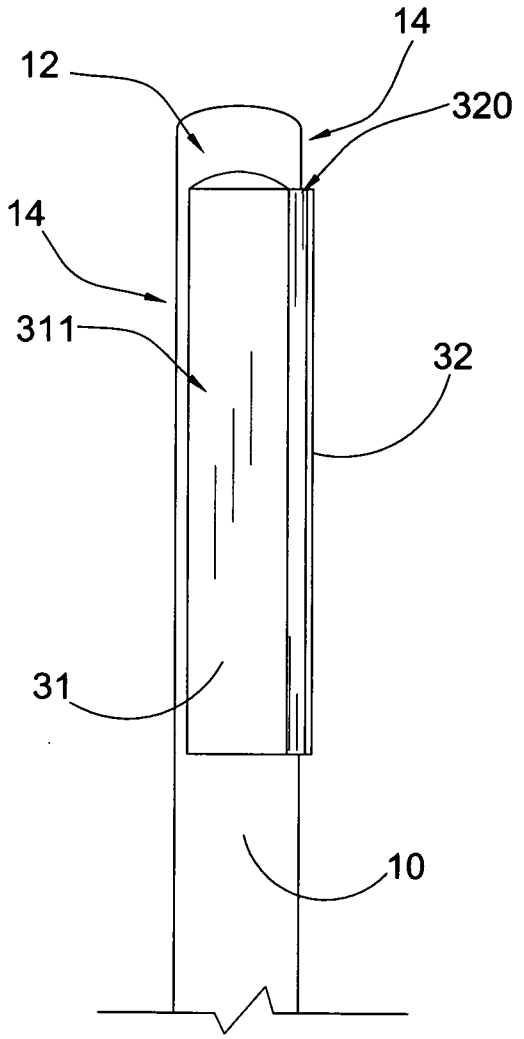


FIG.4

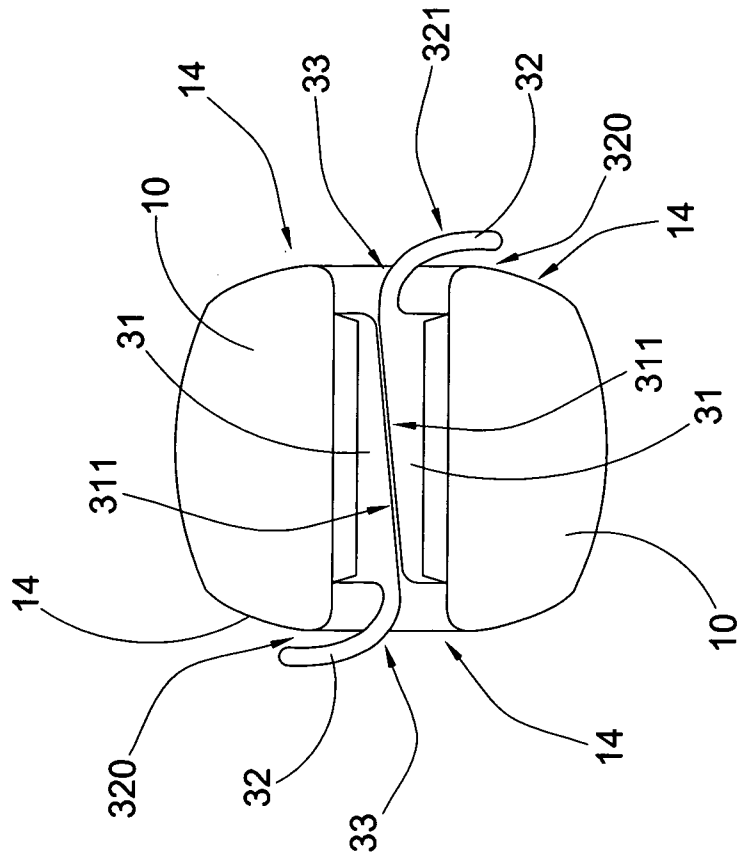


FIG.5

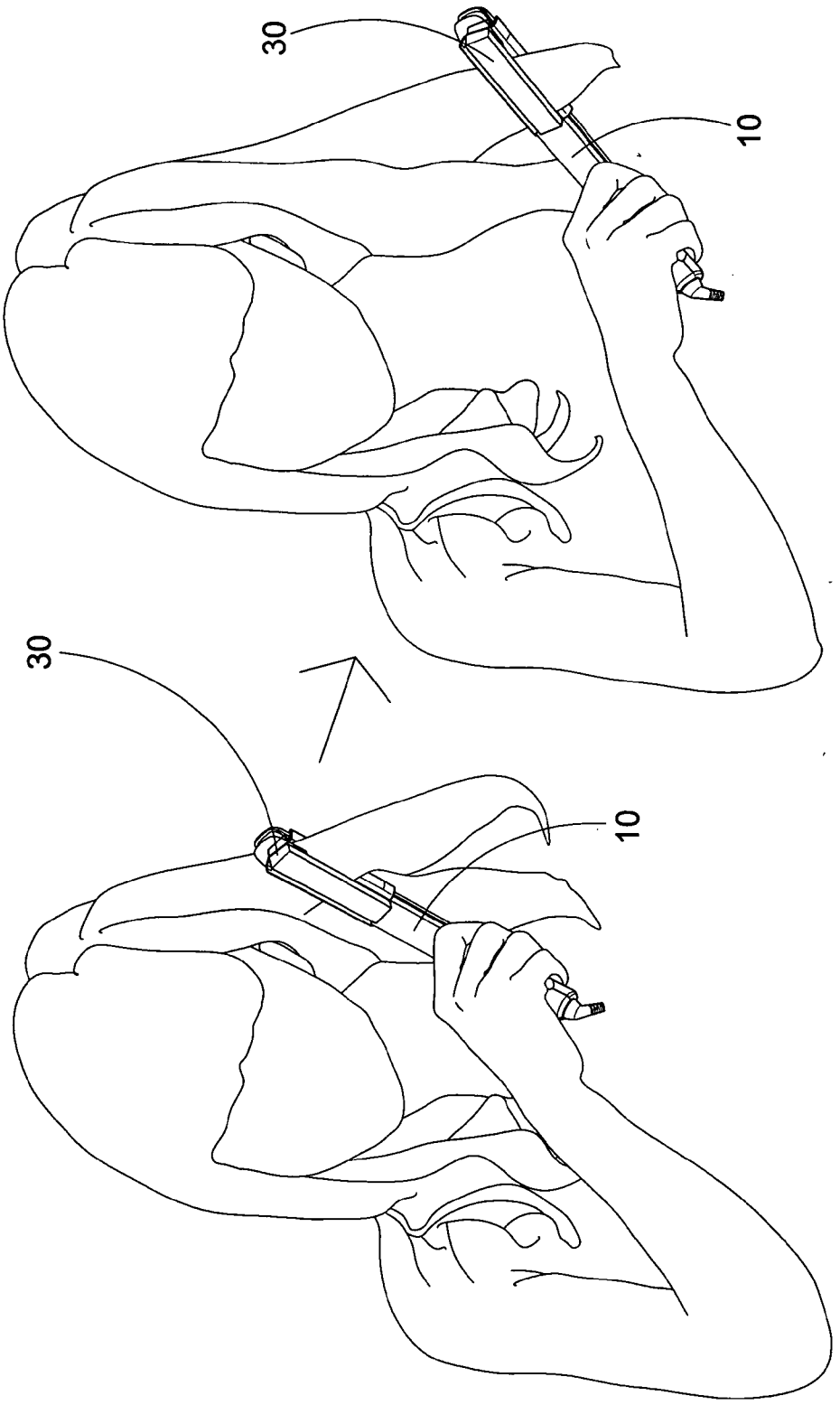


FIG.6

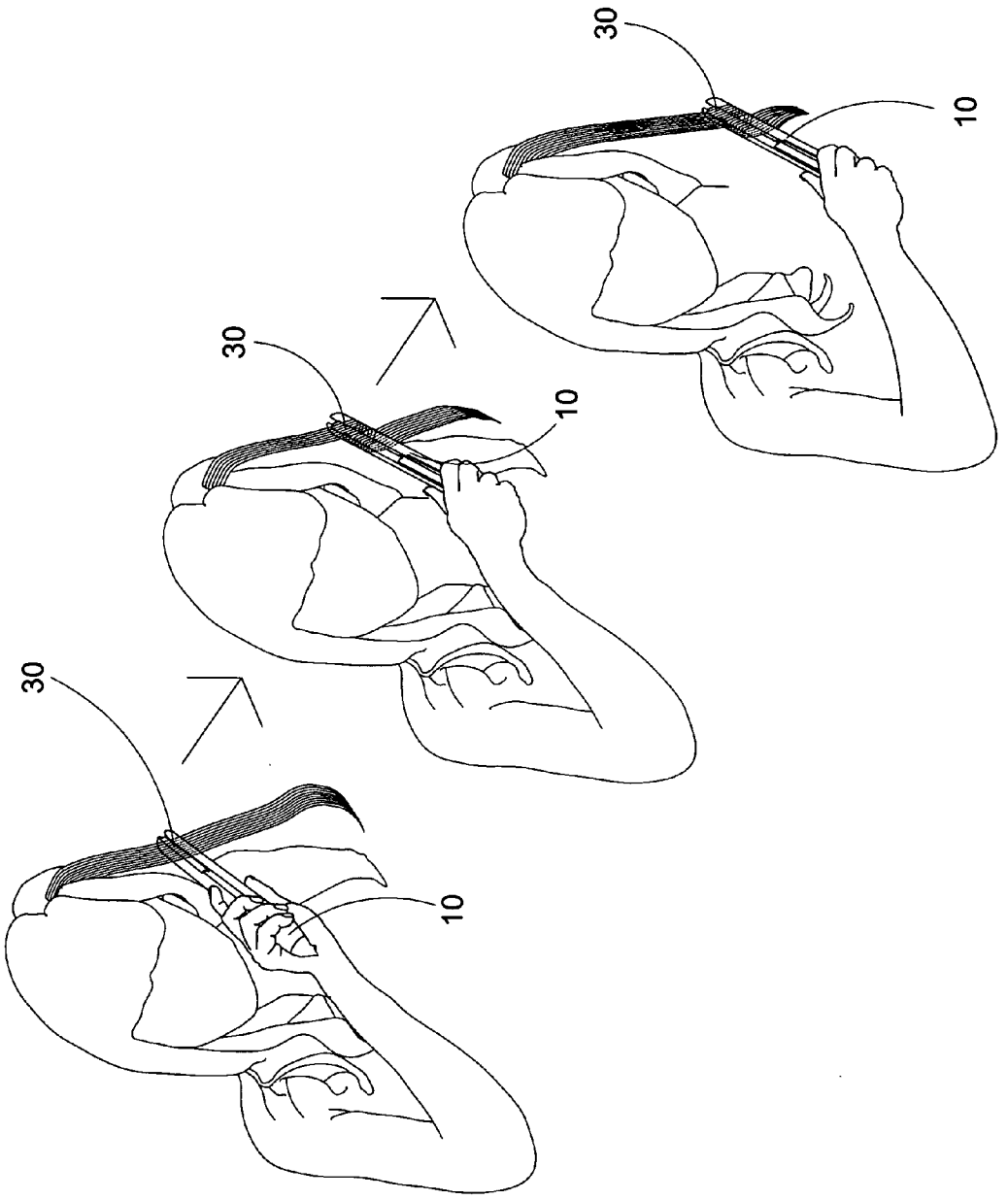


FIG.7

HAIR STRAIGHTENING AND CURLING DEVICE

NOTICE OF COPYRIGHT

BACKGROUND OF THE PRESENT INVENTION

[0002] 1. Field of Invention

[0003] The present invention relates to a hair setter, and more particular to a hair straighten and curling device, which is a S-plate type hair straightening and curling device, wherein the heated plates are adapted for selectively straightening or curling the hair thereof.

[0004] 2. Description of Related Arts

[0005] A conventional hair straightening device comprises two pivot arms pivotally coupled at their ends and two heat plates provided at two free end portions of the pivot arms at the inner sides thereof, wherein the pivot arms are pivotally moved toward each other to overlap the heat plates. It is known that when the lock of hair is gripped between the heat plates, the heat at the heat plates will straighten the hair as a combing action by sliding or pulling down the hair straightening device from the roots of the hairs to the distal ends thereof. However, the conventional hair straightening device has several drawbacks.

[0006] The heating surface of the heat plate is limited by the width of the pivot arm. In other words, the width of the heat plate must be configured to equal or less than the width of the pivot arm. It is worth mentioning that the heating surface of the heat plate is defined as the contacting area between the heat plate and the lock of hair. In other word, the length of the heat plate is ignored as a factor to determine the heating surface of the heat plate. Since the heating surface of the heat plate is relatively small and limited, the user may repeat the combing action until the lock of hair is straightened.

[0007] In addition, in order to utilize the entire width of the heat plate, each of the heat plates is designed to have two longitudinal sharp edges. However, the sharp edges of each heat plate may damage the hairs during the combing action. It should be appreciated that the heat plate can be modified to form two longitudinal curved edges for preventing scratching the hairs. However, as it is mentioned above, the width of the heat plate cannot be fully utilized to maximize the heating surface thereof.

[0008] Furthermore, the conventional hair straightening device can only provide a single function of straightening the hairs. In other words, the user must purchase another hair setter such as hair curling device in order to form different hair styles.

SUMMARY OF THE PRESENT INVENTION

[0009] The invention is advantageous in that it provides a hair straightening and curling device, which is a S-plate type hair straightening and curling device, wherein the heated plates are adapted for selectively straightening or curling the hair thereof.

[0010] Another advantage of the invention is to a hair straightening and curling device, wherein the heat plate comprises a plate body and a side wing extended from the flat plate body to form a L-shaped configuration. Therefore, the user is able to use the flat plate body to straighten the lock of hair or the side wing to curl the lock of hair.

[0011] Another advantage of the invention is to a hair straightening and curling device, wherein the plate body is supported at a slant orientation to substantially increase the heating surface of the heated plate.

[0012] Another advantage of the invention is to a hair straightening and curling device, wherein the side wing is extended from the plate body to form a curved cornering edge for preventing the lock of hair being scratched during the combing action.

[0013] Another advantage of the invention is to a hair straightening and curling device, wherein the side wing is spaced apart from a sidewall of the handle arm to prevent the heat transmitted to the handle arm.

[0014] Another advantage of the invention is to a hair straightening and curling device, wherein the side wings are extended at the opposite sides of the plate bodies to form a S-plate type ironing configuration when the heated plates are overlapped with each other, such that the hair straightening and curling device of the present invention can be operated by both left-handed user and right-handed user.

[0015] Another advantage of the invention is to a hair straightening and curling device, which does not require to alter the original structural frame design of the conventional hair straighten device, so as to minimize the manufacturing cost of the hair straightening device incorporating with the hair ironing arrangement.

[0016] Another advantage of the invention is to a hair straightening and curling device, wherein no expensive or complicated structure is required to employ in the present invention in order to achieve the above mentioned objects. Therefore, the present invention successfully provides an economic and efficient solution for providing a hair straightening and curling device for selectively straightening or curling the hairs.

[0017] Additional advantages and features of the invention will become apparent from the description which follows, and may be realized by means of the instrumentalities and combinations particular point out in the appended claims.

[0018] According to the present invention, the foregoing and other objects and advantages are attained by a hair straightening and curling device, comprising:

[0019] a handle frame comprising two handle arms pivotally extended from a pivot point, wherein each of the handle arms has an end portion defining an inner side and two sidewalls;

[0020] a heating arrangement supported at the handle frame; and

[0021] a hair ironing arrangement which comprises two heated plates provided at the end portions of the handle arms respectively and operatively linked to the heating arrangement, wherein each of the heated plates comprises a plate body provided at the inner side of handle arm and a side wing sidewardly extended from the plate body to form a L-shaped plate structure, wherein the side wing is extended out of the sidewall of the handle arm such that the hair ironing arrangement is adapted for not only straightening a lock of hair when the lock of hair only contacts and sandwiches between the plate bodies but also for curling the lock of hair when the lock of hair contacts with the side wings.

[0022] In accordance with another aspect of the invention, the present invention comprises a method of selectively straightening and curling a lock of hair by a hair straightening and curling device, comprising the following steps.

[0023] (1) Generate heat at the heated plates.

[0024] (2) Selectively control the hair straightening and curling device to straighten the lock of hair or curl the lock of hair.

[0025] The method of straightening the lock of hair comprises the following steps.

[0026] (A) Sandwich a portion of the lock of hair between two plate bodies of the heated plates.

[0027] (B) Slide the heated plates along the lock of hair toward an end thereof.

[0028] The method of curling the lock of hair comprises the following steps.

[0029] (A') Sandwich the portion of the lock of hair between the plate bodies of the heated plates.

[0030] (B') Turn the handle arms to wind the lock of hair therearound to contact the portion of the lock of hair with two side wings of the heated plates.

[0031] (C') Slide the heated plates along the lock of hair toward the end thereof

[0032] Still further objects and advantages will become apparent from a consideration of the ensuing description and drawings.

[0033] These and other objectives, features, and advantages of the present invention will become apparent from the following detailed description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0034] FIG. **1** is a perspective view of a hair straightening and curling device according to a preferred embodiment of the present invention.

[0035] FIG. **2** is an exploded perspective view of the hair straightening and curling device according to the above preferred embodiment of the present invention.

[0036] FIG. **3** is a perspective view of the heated plate at the handle arm of the hair straightening and curling device according to the above preferred embodiment of the present invention.

[0037] FIG. **4** is a side view of the heated plate at the handle arm of the hair straightening and curling device according to the above preferred embodiment of the present invention.

[0038] FIG. **5** is a front view of the hair straightening and curling device according to the above preferred embodiment of the present invention, illustrating the heated plates being contacted and overlapped with each other.

[0039] FIG. **6** illustrates a method of operating the hair straightening and curling device to straighten the lock of hair according to the above preferred embodiment of the present invention.

[0040] FIG. **7** illustrates a method of operating the hair straightening and curling device to curl the lock of hair according to the above preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0041] The following description is disclosed to enable any person skilled in the art to make and use the present invention. Preferred embodiments are provided in the following description only as examples and modifications will be apparent to those skilled in the art. The general principles defined in the following description would be applied to other embodiments, alternatives, modifications, equivalents, and applications without departing from the spirit and scope of the present invention.

[0042] Referring to FIGS. **1** and **2** of the drawings, a hair straightening and curling device according to a preferred embodiment is illustrated, wherein the hair straightening and curling device of the present invention is adapted to selectively straighten or curl a lock of hair in one single device. Accordingly, the hair straightening and curling device of the present invention comprises a handle frame, a heating arrangement **20**, and a hair ironing arrangement.

[0043] As shown in FIGS. **1** and **2**, the handle frame comprises two handle arms **10** pivotally extended from a pivot point **101**, wherein the handle arms **10** are adapted to pivotally move towards each other when a squeezing force is applied at the outer sides of the handle arms **10**.

[0044] Each of the handle arms **10** is formed in an elongated structure, wherein each of the handle arms **10** has a handle portion **11** and an end portion **12**, and defines an inner side **13** and two sidewalls **14**. Accordingly, the inner side **13** of the end portion **12** of each of the handle arms **10** is formed between the two sidewalls **14**. The two sidewalls **14** can be defined as first and second sidewalls or left and right sidewalls. When the squeezing force is applied at the handle portion **11**, the inner sides **13** of the handle arms **10** are moved toward each other.

[0045] As shown in FIG. **2**, the heating arrangement **20** comprises a circuit board **21** supported in one of the handle arms **10** at the handle portion **11** thereof and a control panel **22** provided at the inner side **13** of the handle arm **10** at the handle portion **11** to operatively control the circuit board **21**. The heating arrangement **20** further comprises a status indicator **23** indicating the status of the heating arrangement **20**.

[0046] The hair ironing arrangement comprises two heated plates **30** provided at the end portions of the handle arms **10** respectively and operatively linked to the heating arrangement **20**, wherein when the circuit board **21** is activated, the heated plates **30** will be heated up at a predetermined temperature. Preferably, each of the heated plates **30** is made of heat conductive material, such as Aluminum, to effectively generate heat thereat. Accordingly, the on-off activation of the circuit board **21** and the heating temperature at each of the heated plates **30** can be controlled by the control panel **22**. Preferably the heating temperature is set between 270° F. and 450° F. The status indicator **23** will indicate the on-and-off status of the circuit board **21** and the heating temperature of the heated plates **30**. For example, the status indicator **23** comprises a plurality of LEDs for generating light effects to indicate different statuses of the circuit board **21**.

[0047] As shown in FIGS. **1** to **5**, each of the heated plates **30** comprises a plate body **31** provided at the inner side **13** of handle arm and a side wing **32** sidewardly extended from the plate body **31** to form a L-shaped plate structure. In particular, the side wing **32** is extended out of the corresponding sidewall **14** of the handle arm **10** such that the hair ironing arrangement is adapted for not only straightening a lock of hair when the lock of hair only contacts and sandwiches between the plate bodies **31** but also for curling the lock of hair when the lock of hair further contacts with the side wings **32**.

[0048] As shown in FIG. **4**, each of the plate bodies **31** has a first longitudinal edge extended at the inner side **13** of

handle arm **10** within the first sidewall **14** thereof, and an opposed second longitudinal edge extended beyond the second sidewall **14** of the handle **10**, wherein the side wing **32** is integrally extended from the second longitudinal edge of the plate body **31** to form a one piece L-shaped plate structure.

[0049] Accordingly, each of the plate bodies **31** has a flat heating surface **311** that the flat heating surfaces **311** of the plate bodies **31** are contacted and overlapped with each other for straightening the lock of hair when the handle arms **10** are pivotally moved to each other. As it is mentioned above, the opposed second longitudinal edge of each of the plate bodies **31** is extended beyond the second sidewall **14** of the handle **10**, the heating surface **311** of the plate body **31** will be substantially enlarged. In other words, the width of the heating surface **31** of the plate body **31** will not be limited by the width of the handle arm **10**, i.e. the distance between the sidewalls **13**, as the conventional hair straightening device does.

[0050] As shown in FIGS. **3** to **5**, each of the side wings **32** is spaced apart from the sidewall **14** of the handle arm **10** to define a heat dissipating clearance **320** therebetween, such that the side wing **32** is extended out of the sidewall **14** of the handle arm **10** and does not contact with the sidewall **14** of the handle arm **10** to prevent the heat at the side wing **32** directly transmitting to the handle arm **10**, especially when the sidewall **14** of the handle arm **10** is made of light weight material such as plastic.

[0051] Each of the side wings **32** further has a side heating surface **321** integrally extended from the heating surface **311** of the plate body **31**. The side heating surfaces **321** of the side wings **32** are arranged for curling the lock of hair when the lock of hair contacts with the side heating surfaces **321** of the side wings **32**. Accordingly, when the heated plates **30** are contacted and overlapped with each other, the heated plates **30** forms a S-shaped configuration.

[0052] According to the preferred embodiment, the heated plates **30** are identical to provide at the inner sides **11** of the handle arms **10** respectively. However, the side wings **32** of the heated plates **30** are orientated at opposite locations. In other words, the side wings **32** are extended at opposite edges of the plate bodies **31**, wherein the first longitudinal edge of each of the plate bodies **31** is a longitudinal free edge while the second longitudinal edge is the opposed longitudinal edge where the side wing **32** is extended therefrom. Therefore, one of the side wings **32** is extended out of the first sidewall **14** of one of the handle arms **10** while another side wing **32** is extended out of the second sidewall **14** of another handle arm **10** as shown in FIG. **5**. In other words, when one of the side wings **32** is extended out of the left sidewall of the first handle arm **10**, the other side wing **32** is extended out of the right sidewall of the second handle arm **10**. Therefore, the two L-shaped heated plates **10** are orientated at opposite directions.

[0053] Furthermore, the side wing **32** is sidewardly extended from the plate body **31** to define a curved cornering edge **33**. In other words, the second longitudinal edge of the plate body **31** forms the curved cornering edge **33** of the heated plate **30**. Accordingly, the side heating surface **321** of the side wing **32** is integrally extended from the heating surface **311** of the plate body **31** through the curved cornering edge **33**. It is worth mentioning that the curved cornering edge **33** of the heated plate **30** will prevent directly scratching the lock of hair. In fact, the curved cornering edges **33** of the heated plates **30** will curl the lock of hair in naturally curly appearance.

[0054] In order to further increase the contacting surface area of the plate body **31**, the plate body **31** is slantedly provided at the inner side **13** of the handle arm **10** between the two sidewalls **13** thereof, as shown in FIG. **5**. In particular, the plate body **31** is inclinedly supported at the inner side of the handle arm **10** at a position that the plate body **31** is shifted away from the inner side **13** of the handle arm **10** toward the side wing **32**. In other words, the distance between the inner side **13** of the handle arm **10** and the heating surface **311** of the plate body **31** is gradually increasing towards the side wing **32**.

[0055] For configuring the plate body **31** in an inclined manner, each of the plate bodies **31** has a thickness gradually increasing toward the side wing **32** so as to slantedly form the plate body **31** at the inner side **13** of the handle arm **10** between the two sidewalls **10** thereof. In other words, the plate body **31** can be configured to have a triangular cross section that the side wing **32** is extended from the thicker side of the plate body **31**.

[0056] As shown in FIG. **2**, the hair ironing arrangement further comprises two plate stands **34** supported in the end portions **11** of the handle arms **10** respectively to support the heated plates **30** at the inner sides **13** thereof.

[0057] In order to operate the hair straightening and curling device, the present invention provides a method of selectively straightening and curling the lock of hair by the hair straightening and curling device. The method comprises the following steps.

[0058] (1) Generate heat at the heated plates **30**. The heating temperature can be controlled by the control panel **32**. Preferably, the heating temperature is set between 270° F. and 450° F. In addition, the heated plates **30** are preferably preheated before the use of the hair straightening and curling device.

[0059] (2) Selectively control the hair straightening and curling device to straighten the lock of hair or curl the lock of hair. Accordingly, by holding the handle arms **10** at different position, the hair straightening and curling device of the present invention is adapted to straighten the lock of hair or curl the lock of hair.

[0060] As shown in FIG. **6**, in the step (2), the method of straightening the lock of hair comprises the following steps.

[0061] (A) Sandwich a portion of the lock of hair between two plate bodies **31** of the heated plates **30**. Accordingly, when the squeezing force is applied to the handle arms **10**, the handle arms **10** will be pivotally moved to each other to sandwich the portion of the lock of hair between the heating surfaces **311** of the plate bodies **31**. At this moment, heat at the heating surfaces **311** of the plate bodies **31** will apply to the portion of the lock of hair. Preferably, the portion of the lock of hair is the portion close to the root of the lock of hair being initially retained between the plate bodies **31**. Preferably, the handle arms **10** are positioned perpendicularly to the lock of hair. In addition, the user is able to hold the handle portions **11** of the handle arms **10** at a position the back of the hand faces outward with respect to the user body.

[0062] (B) Slide the heated plates **31** along the lock of hair toward an end thereof. The user is able to slowly move the handle arms **10** to slide the heated plates **31** towards the end of the lock of hair. It is worth mentioning that the lock of hair will only contact with the heating surfaces **311** of the plate

bodies **31** without contacting the side heating surfaces **321** of the side wings **32**. As a result, the lock of hair will be straightened by the heat from the heating surfaces **311** of the plate bodies **31**. It is worth mentioning that since the plate bodies **31** are extended inclinedly, the contacting surface area between the heating surfaces **311** and the lock of hair will be substantially increased to effectively straighten the lock of hair by heat.

[0063] As shown in FIG. **7**, in the step (2), the method of curling the lock of hair comprises the following steps.

[0064] (A') Sandwich the portion of the lock of hair between the plate bodies **31** of the heated plates **30**. Likewise, when the squeezing force is applied to the handle arms **10**, the handle arms **10** will be pivotally moved to each other to sandwich the portion of the lock of hair between the heating surfaces **311** of the plate bodies **31**. At this moment, heat at the heating surfaces **311** of the plate bodies **31** will apply to the portion of the lock of hair. Preferably, the portion of the lock of hair is the portion where the user wants to start curling the lock of hair, such that the portion of the lock of hair is initially retained between the plate bodies **31**.

[0065] (B') Turn the handle arms **10** to wind the lock of hair therearound to contact the portion of the lock of hair with two side wings **32** of the heated plates **30**. Preferably, the handle arms **10** are turned at 180° that the portion of the lock of hair is wound around the end portions **12** of the handle arms **10**. Accordingly, after the handle arms **10** are turned, the portion of the lock of hair will contact with the heating surfaces **311** of the plate bodies **31**, the side heating surfaces **321** of the side wings **32**, and the curved cornering edges **33**.

[0066] In order to turn the handle arms **10**, the user is able to initially hold the handle portions **11** of the handle arms **10** at a position the back of the hand faces inward with respect to the user body. Then, the user is able to turn her wrist until the back of the hand faces outward.

[0067] Accordingly, the curliness of the lock of hair can be selectively controlled by the position of the handle arms **10** with respect to the lock of hair. When the handle arms **10** are positioned perpendicularly to the lock of hair, the handle arms **10** are turned to wrap the portion of the lock of hair around the end portions **12** of the handle arms **10** with smaller diameter. As a result, smaller waves of the lock of hair will be formed. When the handle arms **10** are positioned transversely (not perpendicularly) to the lock of hair, the handle arms **10** are turned to wrap the portion of the lock of hair around the end portions **12** of the handle arms **10** with larger diameter. Therefore, larger waves of the lock of hair will be formed.

[0068] (C') Slide the heated plates **30** along the lock of hair toward the end thereof. The user is able to slowly move the handle arms **10** to slide the heated plates **31** towards the end of the lock of hair while the handle arms **10** are remained at the turned position. Since the lock of hair will contact with the heating surfaces **311** of the plate bodies **31**, the side heating surfaces **321** of the side wings **32**, and the curved cornering edges **33**, the lock of hair will be curled by the heat from the entire heating surfaces of the heated plates **30**.

[0069] One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting.

[0070] It will thus be seen that the objects of the present invention have been fully and effectively accomplished. The embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

1. A hair straightening and curling device, comprising:

a handle frame comprising two handle arms pivotally extended from a pivot point, wherein each of said handle arms has an end portion defining an inner side and two sidewalls;

a heating arrangement supported at said handle frame; and

a hair ironing arrangement which comprises two heated plates provided at said end portions of said handle arms respectively and operatively linked to said heating arrangement, wherein each of said heated plates comprises a plate body provided at said inner side of said handle arm and a side wing sidewardly extended from said plate body to form a L-shaped plate structure, wherein each of said plate body has a first longitudinal edge extended to said side wing, an opposed second longitudinal edge which is a longitudinal free edge, and a heating surface inclinedly extended from said side wing to said second longitudinal edge of said plate body, such that said heating surfaces are contacted and overlapped with each other for straightening a lock of hair therebetween, wherein said side wings are extended in opposite directions, such that when said handle frame is turned for winding said lock of hair around said end portions of said handle frame, said side wings of said heated plates are arranged for contacting portions of said lock of hair to curl the lock of hair around said end portions of said handle frame.

2. The hair straightening and curling device, as recited in claim **1**, wherein each of said side wings is spaced apart from said sidewall of said handle arm to define a heat dissipating clearance therebetween for preventing heat at said side wings directly transmitting to said handle arm.

3. The hair straightening and curling device, as recited in claim **1**, wherein said side wing is sidewardly extended from said plate body to define a curved cornering edge for enabling said lock of hair to be wound around said end portions of said handle frame and for preventing said lock of hair directly scratching at said cornering edge.

4. The hair straightening and curling device, as recited in claim **2**, wherein said side wing is sidewardly extended from said plate body to define a curved cornering edge for enabling said lock of hair to be wound around said end portions of said handle frame and for preventing said lock of hair directly scratching at said cornering edge.

5. The hair straightening and curling device, as recited in claim **1**, wherein said heating surface of each of said plate bodies is a flat heating surface that said flat heating surfaces of said plate bodies are contacted and overlapped with each other for straightening the lock of hair.

6. The hair straightening and curling device, as recited in claim **4**, wherein said heating surface of each of said plate bodies is a flat heating surface that said flat heating surfaces of said plate bodies are contacted and overlapped with each other for straightening the lock of hair.

7. The hair straightening and curling device, as recited in claim **1**, wherein said side wings are extended oppositely from said plate bodies and said longitudinal free edges of said plate bodies are located oppositely, such that when said heat

plates are contacted with each other, said heated plates form a S-shaped configuration for winding said lock of hair therearound.

8. The hair straightening and curling device, as recited in claim **6**, wherein said side wings are extended oppositely from said plate bodies and said longitudinal free edges of said plate bodies are located oppositely, such that when said heat plates are contacted with each other, said heated plates form a S-shaped configuration for winding said lock of hair therearound.

9. The hair straightening and curling device, as recited in claim **1**, wherein said plate body is slantedly provided at said inner side of said handle arm between said two sidewalls thereof at a position that said heating surface of said plate body is inclinedly extended away from said inner side of said handle arm toward said side wing to increase a contacting surface area.

10. The hair straightening and curling device, as recited in claim **8**, wherein said plate body is slantedly provided at said inner side of said handle arm between said two sidewalls thereof at a position that said heating surface of said plate body is inclinedly extended away from said inner side of said handle arm toward said side wing to increase a contacting surface area.

11. The hair straightening and curling device, as recited in claim **1**, wherein each of said plate bodies has a thickness gradually increasing toward said side wing so as to slantedly form said heating surface of the plate body at said inner side of said handle arm between said two sidewalls thereof.

12. The hair straightening and curling device, as recited in claim **10**, wherein each of said plate bodies has a thickness gradually increasing toward said side wing so as to slantedly form said heating surface of the plate body at said inner side of said handle arm between said two sidewalls thereof.

13. A method of selectively straightening and curling a lock of hair by a hair straightening and curling device which comprises two heated plates at two handle arms respectively, comprising the steps of:

(a) generating heat at said heated plates;

(b) straightening the lock of hair by the steps of:

(b.1) sandwiching a portion of the lock of hair between two plate bodies of said heated plates; and

(b.2) sliding said heated plates along the lock of hair toward an end thereof; and

(c) curling the lock of hair by the steps of:

(c.1) sandwiching the portion of the lock of hair between said plate bodies of said heated plates;

(c.2) turning said handle arms to wind the lock of hair therearound to contact the portion of the lock of hair with two side wings of said heated plates, wherein said side wing is sidewardly extended from said plate body to form a L-shaped plate structure and is extended out of a sidewall of said handle arm; and

(c.3) sliding said heated plates along the lock of hair toward the end thereof.

14. The method as recited in claim **13** wherein, in the step (c.2), each of said side wings is spaced apart from said sidewall of said handle arm to define a heat dissipating clearance therebetween.

15. The method as recited in claim **13** wherein the step (c.2) further comprises a step of contacting the portion of the lock of hair with two curved cornering edges of said heated plate when said handle arms are turned, wherein each of said curved cornering edge is defined between said side wing and said plate body of each of said heated plate.

16. The method as recited in claim **14** wherein the step (c.2) further comprises a step of contacting the portion of the lock of hair with two curved cornering edges of said heated plate when said handle arms are turned, wherein each of said curved cornering edge is defined between said side wing and said plate body of each of said heated plate.

17. The method as recited in claim **13** wherein, in the step (c.2), said handle arms are turned at 180°.

18. The method as recited in claim **16** wherein, in the step (c.2), said handle arms are turned at 180°.

19. The method, as recited in claim **13**, wherein said side wings are extended at opposite edges of said plate bodies such that each of said plate bodies has one longitudinal free edge and an opposed longitudinal edge where said side wing is extended therefrom.

20. The method, as recited in claim **18**, wherein said side wings are extended at opposite edges of said plate bodies such that each of said plate bodies has one longitudinal free edge and an opposed longitudinal edge where said side wing is extended therefrom.

21. The method, as recited in claim **13**, wherein said plate body is slantedly provided at an inner side of said handle arm between said two sidewalls thereof at a position that said plate body is inclinedly extended away from said inner side of said handle arm toward said side wing to increase a contacting surface area.

22. The method, as recited in claim **20**, wherein said plate body is slantedly provided at an inner side of said handle arm between said two sidewalls thereof at a position that said plate body is inclinedly extended away from said inner side of said handle arm toward said side wing to increase a contacting surface area.

23. A hair straightening and curling device, comprising:

a handle frame comprising two handle arms pivotally extended from a pivot point, wherein each of said handle arms has an end portion defining an inner side and two sidewalls;

a heating arrangement supported at said handle frame; and

a hair ironing arrangement which comprises two heated plates provided at said end portions of said handle arms respectively and operatively linked to said heating arrangement, wherein each of said heated plates comprises a plate body provided at said inner side of said handle arm and a side wing sidewardly extended from said plate body to form a L-shaped plate structure, wherein said side wing is extended out of said sidewall of said handle arm such that said hair ironing arrangement is adapted for not only straightening a lock of hair when the lock of hair only contacts and sandwiches between said plate bodies but also for curling the lock of hair when the lock of hair contacts with said side wings.

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