Nov. 11, 1924. 1,514,957

J. C. DORAN

HAIR CURLING DEVICE

Filed July 21, 1922

Fig. 1.

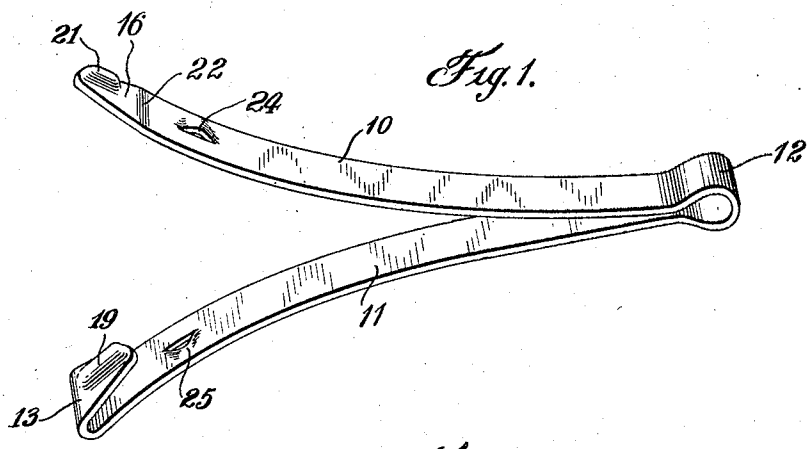


Fig. 2

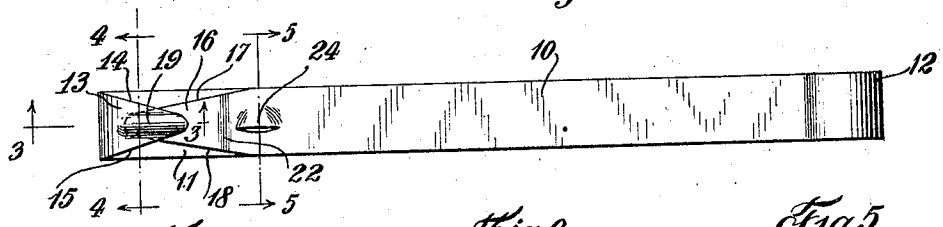


Fig. 3.

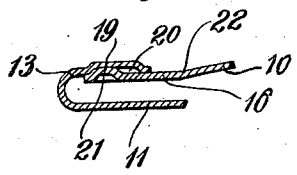


Fig. 4

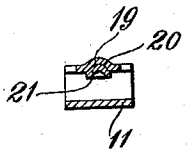


Fig. 5

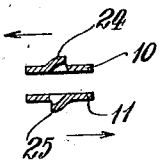


Fig. 6.

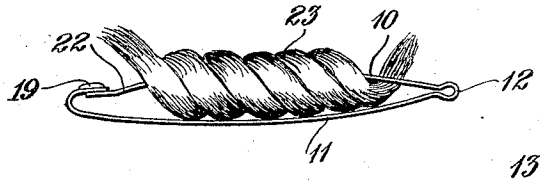


Fig. 7.

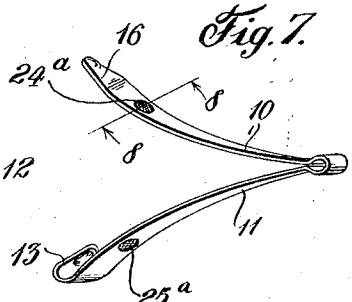
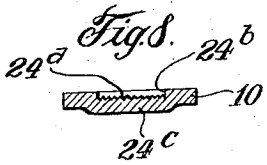


Fig. 8.



John C. Doran Inventor

By his Attorney

Robert S. Blair

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UNITED STATES PATENT OFFICE.

JOHN C. DORAN, OF DANBURY, CONNECTICUT.

HAIR-CURLING DEVICE.

Application filed July 21, 1922. Serial No. 576,418.

To all whom it may concern:

Be it known that I, JOHN C. DORAN, a citizen of the United States, and a resident of Danbury, in the county of Fairfield, State of Connecticut, have invented an Improvement in Hair-Curling Devices, of which the following is a specification.

This invention relates to hair-curling devices.

An object of this invention is to provide a simple and practical device for crimping or curling hair. Another object is to provide a device of the above nature that will be convenient as well as simple in manipulation and use and which will be well adapted to meet varying conditions of use. Another object is to provide a device of the above nature in which the several parts may be dependably locked together and separated with minimum manual effort and in which simplicity, ruggedness and durability of construction may be combined with convenience of manipulation. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangements of parts as will be exemplified in the structure hereinafter set forth and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings in which are shown several possible embodiments of this invention,

Figure 1 is a perspective view of a hair-curling device showing the parts in opened position and in readiness for application;

Figure 2 is a plan view of the device showing the parts in closed or locked position;

Figure 3 is a longitudinal vertical section taken on the line 3—3 of Fig. 2;

Figure 4 is a transverse sectional view taken on the line 4—4 of Fig. 2, and

Figure 5 is a transverse section taken on the line 5—5 of Fig. 2;

Figure 6 is a side elevation on a smaller scale showing the device in use;

Figure 7 is a perspective view on a small scale of a modified form of the device; and

Figure 8 is an enlarged section on the line 8—8 of Fig. 7.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings, and more particularly to Figs. 1 and 2, there is shown a pair of members 10 and 11 preferably made of flat material and connected together at one end thereof as by the looped or bent portion 12. As will be seen in Fig. 1, I prefer to construct the members 10 and 11, as well as the connecting portion 12 thereof, out of a single strip of material, and I also prefer to make these parts of such a material that the members 10 and 11 tend normally to spring away from each other and into the opened position as shown in Fig. 1.

The other end of the member 11 is bent backwardly upon itself and in a direction toward the oppositely disposed member 11, and the backwardly bent portion indicated at 13 I prefer to provide with side edges 14 and 15 which approach each other as the end of the portion 13 is reached, thereby giving the backwardly bent portion 13 a shape as viewed in Fig. 2, which may be termed V-shaped. The other end of the other member 10, indicated at 16, is shaped to have side edges 17 and 18 which approach each other as the end of the member 10 is neared, so as to give the end portion 16 of the member 10 substantially a V-shape. It will be noted, however, that the side edges 17 and 18 of the portion 16 of the member 10 approach each other less rapidly than do the side edges 14 and 15 of the backwardly bent portion 13 of the other member 11. The members 10 and 11 are adapted to be forced toward each other and by relatively displacing one with respect to the other the end 16 of the member 10 may be made to move underneath the bent portion 13 of the member 11 and to be locked in position thereunder in a manner to be more clearly hereinafter set forth. By relating the side edges of the respective portions 16 and 13 as above described it will be seen that only a comparatively slight relative lateral displacement of the one member, as the member 10 for example, with respect to the other member 11 is necessary to engage or disengage the ends 16 and 13. As viewed in Fig. 2, it will be seen that only a relatively slight displacement of the member 10 in an upward direction is necessary to place the side edge 18 of the end portion 16 in substantial parallelism with the side edge 14 of the bent

portion 13, thereby to effect the immediate disengagement and release of the member 10 from the member 11. The members 10 and 11 tend to offer a substantial resistance to such relative lateral displacement as is necessary to bring the respective parts into engaging or disengaging relation, and it will be noted that by minimizing the amount of relative displacement necessary to bring about the disengagement or engagement of the parts the manual effort required is materially reduced. The backwardly bent portion 13 of the member 11 is stamped in preferably an upward direction as at 19, as will be more clearly seen in Figs. 3 and 4, to provide upon the interior thereof a groove or guiding and locking way 20 extending longitudinally in the direction of the member 11. The end portion 16 of the oppositely disposed member 10 is stamped or pressed in preferably an outward direction and preferably well within the apex of the V-shaped end portion 16 to provide an engaging device 21 of less extent in a longitudinal direction than the locking or guiding way 20 and adapted to slidably engage within the locking way 20, as is clearly shown in Figs. 3 and 4. Preferably also I place a slight bend in the member 10 as at 22 in order that the end portion 16 thereof with its associated projection 21 may be preferably out of the plane of the member 10.

Upon the members 10 and 11 being placed in closed position by the relative lateral displacement as hereinbefore described, the device 21 on the end portion 16 is engaged within the longitudinally extending way 20 and substantially mates therewith and securely locks the members 10 and 11 in closed position, as is shown in Figs. 3 and 4. When the device, however, is applied in use, as is shown in Fig. 6 of the drawings, the hair or material, indicated generally at 23, wound upon one of the members as 10 brings about a tendency to separate or part the members 10 and 11 from one another, this separation or parting of the members 10 and 11 varying in degree with the amount of hair or material wound thereon. Such action results in a relative longitudinal movement of the end portions 13 and 16 with respect to one another and the guiding and locking way 20 being of greater longitudinal extent than the coacting portion 21 engaged therein permits the latter to automatically assume any position within the former depending upon the amount of material wound upon the parts. The positive and dependable locking together of the parts is thereby assured. The bend at 22 in the member 10 insures the engagement of the device 21 in mating relation with respect to the locking way 20, as is clearly shown in Fig. 6, throughout the range of relative longitudinal movement of the parts when in use.

The relative lateral displacements of the members 10 and 11, by which their engagement and disengagement is brought about, are caused to take place by gripping the members 10 and 11 between the fingers and adjacent their ends. As shown in Fig. 1, and more clearly in the sectional view in Fig. 5 of the drawings, I have provided adjacent the end portions 13 and 16 of the members 10 and 11 the finger grips 24 and 25 respectively, preferably formed by cutting a slit in each member 10 and 11 and pressing the material on one side of the slit outwardly. As is clearly shown in Fig. 1, the material on one side of the slit is pressed outwardly to a progressively greater degree as the center of the grips 24 and 25 is approached, thus exposing a side edge of the material to form a positive finger grip and a gradual curvature longitudinally of the members 10 and 11 to avoid catching of the hair 23. The parts 24 and 25 thus provide an exposed side edge by means of which a positive grip upon the parts by the fingers may be obtained and snarling of the hair therein prevented. It will be understood that in the use of devices of this character perspiration and hair oils upon the fingers or upon the devices themselves greatly hinder convenient manipulation of the parts of the device, thus necessitating greater manual effort to bring about the relative displacement of the parts. Where the members 10 and 11 are made of a material such as spring steel, for example, the resistance to relative lateral displacement is substantial and the provision of positive finger grips effectually minimizes the manual effort necessary and also eliminates the usual tiresome and vexatious attempts at bringing about the desired action.

Moreover, it will be noted that I prefer to form the finger grips 24 and 25 by pressing the material as above described in an outward direction but upon opposite sides of the slits formed in the members 10 and 11. This feature of construction is clearly shown in Fig. 5 and it will be therein seen that the side edges of the finger grips 24 and 25 when exposed permit the positive lateral displacement of the parts 10 and 11 with respect to one another in the direction of the arrows shown in this figure.

In Fig. 7 is shown in perspective on a smaller scale a hair-curling device having the members 10 and 11 with respective end portions 16 and 13 preferably formed as hereinbefore described. Adjacent the end portions 16 and 13 and on oppositely disposed faces thereof I have provided the finger grip portions generally indicated at 24^a and 25^a. Referring now to Fig. 8 in

which is shown an enlarged section taken through one of the finger grip portions, as 24^a, for example, of Fig. 7, it will be noted that I provide an exposed side edge, as 24^b, of the material by pressing inwardly a portion 24^c of the material of the member 10, the side edge 24^b being thus cut in the member 10 upon the depression of the portion 24^c. The portion 24^c thus pressed inwardly to cut and expose the lateral edge 24^b, may be substantially circular thus to provide an exposed side edge 24^b, which is also substantially circular. This side edge 24^b thus formed on each of the members 10 and 11 provides a positive finger grip for permitting the convenient manipulation of the members 10 and 11. It will also be noted that in this construction, while a side edge as 24^b is formed or exposed to permit a positive grip to be obtained upon the members, no undesirable protrusions or projections are formed that may otherwise cause the catching or snarling therein of the hair. Preferably, I prefer to cut in the surface of the depressed portion 24^c and include within the substantially circular side edge 24^b a series of ridges, indicated in Fig. 8 at 24^d, thus also to expose side or lateral edges of the material by means of which a positive grip upon the members may be obtained. The series of ridges 24^d may conveniently be formed as by a knurling tool, for example.

It will thus be seen that there has been provided in this invention a hair-curling device in which the several objects and advantages hereinbefore set forth, as well as many others, are successfully achieved. It will be seen that the device is of simple construction, is readily adaptable to varying conditions of use, and is convenient of manipulation.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment herein set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In a device of the character described, in combination, a pair of oppositely disposed members of substantially flat material; means connecting said members at one end thereof, said members being adapted to spring away from one another, one of said members being bent backwardly upon itself at the other end thereof and toward said other member, and the other member being adapted upon a relative lateral displacement to have its other end moved under said backwardly bent portion and into engagement therewith; and a finger grip having an exposed side edge associated with one of said members upon the outer face thereof and in proximity to the engaging end thereof.

2. In a device of the character described, in combination, a pair of oppositely disposed members; and means connecting said members at one end thereof, said members being adapted to spring away from one another, one of said members having formed at the other end thereof a portion bent backwardly upon itself and toward the other member and said backwardly bent portion having a groove formed upon the interior thereof and extending longitudinally in the direction of said backwardly bent portion, and the other end of the other member having projecting means of less extent longitudinally than said groove and adapted upon movement of said member under said backwardly bent portion to enter said longitudinal groove and to move along said groove in accordance with the amount of material inserted between said oppositely disposed members.

3. In a device of the character described, in combination, a pair of oppositely disposed members of flat material; and means connecting said members at one end thereof, said members being adapted to spring away from one another, one of said members being bent backwardly upon itself and toward the other member and said backwardly bent portion having pressed therein and upon the inside thereof a way extending longitudinally in the direction of said backwardly bent portion, and the other end of the other member being provided with a device of less longitudinal extent than said way and adapted to engage and substantially mate with said longitudinally extending way upon movement of said member under said backwardly bent portion, said device assuming a position within said way along the length thereof in accordance with the amount of material inserted between said members.

4. In a device of the character described, in combination, a pair of oppositely disposed members of flat material; means connecting said members at one end thereof, said members being adapted to spring away from one another, one of said members being bent backwardly upon itself at the other end thereof and toward said other member, and the other member being adapted upon a relative lateral displacement to have its other end moved under said backwardly bent portion and into engagement therewith; and a finger grip in one of said members adjacent its engaging end, said finger grip including a depressed and cut portion of said member.

5. In a device of the character described, in combination, a pair of oppositely disposed members of flat material; and means connecting said members at one end thereof,

said members being adapted to spring away from one another, one of said members being bent backwardly upon itself at the other end thereof and toward said other member, and the other member being adapted upon a relative lateral displacement to have its other end moved under said backwardly bent portion and into engagement therewith, a portion of each of said members adjacent the engaging ends thereof being cut and depressed to expose a side edge of material of said members to form a finger grip for laterally displacing said members relative to each other.

6. In a device of the character described, in combination, a pair of oppositely disposed members of flat material; means connecting said members at one end thereof, said members being adapted to spring away from one another, one of said members being bent backwardly upon itself at the other end thereof and toward said other member, and the other member being adapted upon a relative lateral displacement to have its other end moved under said backwardly bent portion and into engagement therewith; and a finger grip on one of said members adjacent its engaging end, said grip being formed by displacing a portion of the material of said member out of the plane of said member to provide a side edge extending substantially transversely to the plane of said member.

7. In a device of the character described, in combination, a pair of oppositely disposed members of flat material; means connecting said members at one end thereof, said members being adapted to spring away form one another, one of said members being bent backwardly upon itself at the other end thereof and toward said other member, and the other member being adapted upon a relative lateral displacement to have its other end moved under said backwardly bent portion and into engagement therewith; and a finger grip on one of said members adjacent its engaging end, said grip being formed by shearing and displacing a portion of the material of said member out of the plane of said member, the section of shear forming an exposed side edge.

In testimony whereof, I have signed my name to this specification this 17th day of July, 1922.

JOHN C. DORAN.