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J. DEKEL

3,111,130

CLIP CONSTRUCTION

Filed Sept. 19, 1961

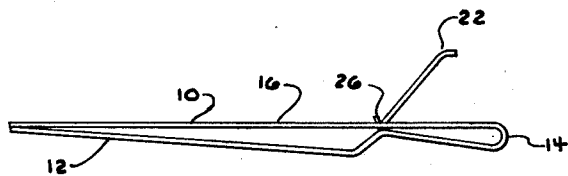


FIG. 1

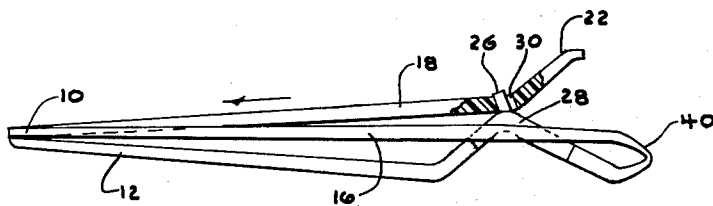


FIG. 2

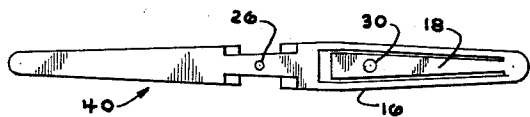


FIG. 7

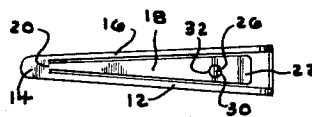


FIG. 4

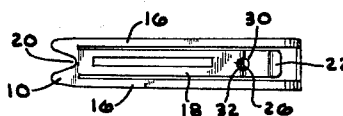


FIG. 5

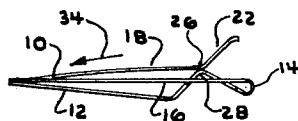


FIG. 3

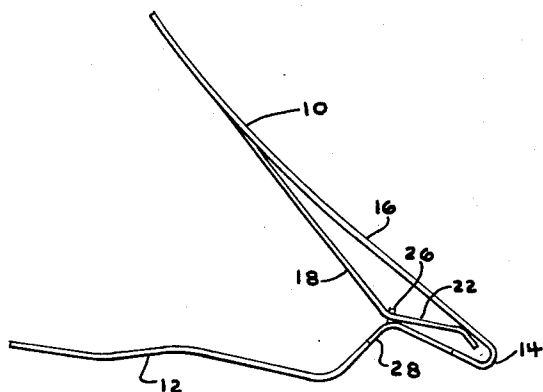


FIG. 6

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CLIP CONSTRUCTION

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5 Claims. (Cl. 132-48)

This invention relates to a clip design which, for example, has as one of its most important applications the holding of pin curls in place while the hair is setting. Pin curls comprise small, round, flat curls which may be wound either clockwise or counterclockwise and positioned close to the scalp. It is important that the pin curls be maintained in position during setting and drying, and hair clips have been designed for such purposes.

Many designs of hair clips are available, but the prior clips have been unsatisfactory for the reason that they have been expensive and unduly susceptible to deformation, the latter factor greatly decreasing the useful life thereof.

A further disadvantage of most of the presently available clips resides in the fact that they are generally composed of two or more parts which are not readily assembled. The present multi-piece clips are more expensive than a single piece construction and are also more susceptible to breakage during use.

Existing clip designs are also deficient in that pressure is required to spread apart the jaws thereof and the jaws must be held in this manner until the clip is put in place. In the case of a beauty operator, who must handle numerous clips, this can become an extremely tedious operation.

There has not been devised heretofore a simple hair clip construction which can employ relatively inexpensive and readily fabricated materials. On the other hand, it has been the experience of the prior art that hair clip materials must be selected from spring steel or other similar materials which are difficult to fabricate.

In a companion case of the applicant, entitled Clip Construction, Serial No. 139,151, filed September 19, 1961, there is described a hair clip which is composed of a plurality of easily fabricated and assembled parts. The hair clip described in this application has been found to overcome many of the above noted deficiencies. This invention has for one of its objects the manufacture of a clip which may, if desired, be made of a single piece construction.

It is an additional object of this invention to provide a clip which is characterized by extreme ease of use in that it is capable of retaining its jaws spread apart without the application of pressure.

It is an additional object of this invention to provide a clip construction which can be manufactured from inexpensive and readily fabricated materials.

These and other objects of this invention will appear hereinafter and for purposes of illustration, but not of limitation, specific embodiments of this invention are shown in the accompanying drawings in which:

FIGURE 1 is a side elevation of a hair clip characterized by the features of this invention;

FIGURE 2 is a side elevation of an alternative hair clip design which is manufactured from plastic material;

FIGURE 3 is a side elevation of an additional alternative design;

FIGURE 4 is a plan view of a hair clip construction;

FIGURE 5 is a plan view of a hair clip construction having an alternative design;

FIGURE 6 is a side elevation of a hair clip as it appears in the open position; and

FIGURE 7 is a plan view of a blank employed in the formation of the inventive clips.

The clips of this invention are most preferably made of a single piece construction which comprises upper and lower jaws adapted to resiliently engage each other where-

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by the work to be engaged can be clamped therebetween. The upper jaw of the clip preferably includes a pair of arms extending laterally to a central fold in the construction. A jaw urging member is formed preferably in the upper jaw between the extending arms. The jaw urging member extends from the end of the upper jaw and most advantageously terminates in a finger actuated tongue portion. A raised portion is formed in the lower jaw and the jaw positioning member is adapted to be secured to this raised portion.

In the specific design of the clips of this invention, the jaw urging member has a length between the point where it extends from the end of the upper jaw and it is to connect with the raised portion of the lower jaw which is greater than the actual distance between these points so that the jaw urging member is placed under an initial compression when it is anchored to the lower jaw. This design of the jaw urging member provides for the directing of force along the length of this member whereby the jaws of the clip are urged into engagement in one position and whereby the jaws are urged apart when disposed in another position. In one form of the invention, the actuating tongue is provided in the construction for forcing the jaws apart beyond the neutral point, and the jaw urging member will then take over to hold the clips in the open position. Application of pressure to the spread apart jaws will result in passing of the neutral point whereby the jaws will be clamped tightly together due to the urging of the jaw urging member.

Various hair clip constructions which embody the aforementioned characteristics are shown in the accompanying drawings. The illustrated clips generally comprise upper and lower jaws 10 and 12 which are formed by folding over a single piece hair clip blank at 14. The arms 16 extend along the upper jaw to the fold 14 and a jaw urging member 18 extends between the arms. This member 18 is formed to extend from the point 20 on the upper jaw 10 and it includes at the distal end thereof an actuating tongue 22.

Connecting means are provided for securing the upper and lower jaws at a fulcrum point. These connecting means may comprise a tab 26 formed on the raised portion 28 of the lower jaw 12. The tab 26 is designed to extend into an opening 30 formed in the member 18.

The jaw urging member 18 is dimensioned whereby its length is at least equal to, and is preferably slightly greater than, the distance from the point 20 to the juncture with tab 26. Thus, when the clip is made ready for use, the opening 30 will be pressed over the tab 26 and the leading edge 32 of the opening will be pressed against the tab thus transmitting force through the means 18 in the direction of the arrow 34 (FIGURE 3).

It will be apparent that when the actuating tongue 22 is pressed the jaws 10 and 12 will spread apart in opposition to the urging of means 18. Eventually the means 18 will be disposed on the under side of arms 16 and will then urge the upper jaw into an open position as shown in FIGURE 6. To clamp the jaws, pressure is simply exerted on the ends of the jaws 10 and 12 until the aforementioned neutral point is reached, at which time the urging of the means 18 will hold the jaws in closed position.

FIGURE 2 illustrates a modification of the invention wherein the clips are manufactured from plastic materials. The construction provides a thin section 40 for the clip at the central fold whereby the clip can be repeatedly bent without failure at this joint. Narrow hinge portions of the design disclosed are commonly employed where materials such as polypropylene, nylon, delryn, high impact styrene, Teflon, polyethylene, vinyl, etc., are used in the manufacture of articles, and these and similar ma-

materials are contemplated for use in connection with the disclosed clips.

The lower jaw 12 is preferably crimped whereby the portion 28 thereof will be raised above the arms 16 when the jaws are engaged. This construction insures the hold of the jaws in a clamped position, particularly where a relatively thick pin curl is held between the jaws. Furthermore, it is preferable that the length of the positioning means 18 be slightly greater than the distance between the point 20 and tab 26, since this design will provide the maximum clamping force for the clip jaws:

The clips of this invention are characterized by a clamping force which is far superior to that obtained in prior devices. There is no problem with regard to release of the clips from a curl due to insufficient clamping, and the positive action of the positioning means 18 is not diminished even after extended use. Furthermore, the ability of the clips to remain open prior to clamping is important, since there is no need to exert finger pressure while holding the clips. The design would permit a beauty operator to open several clips prior to commencing a particular hairdo, and the clips will thus be ready for instant use, saving time and energy.

In constructing the clips of this invention softer, less expensive materials can be employed, since the positive action of the positioning means 18 does not depend on the strength or spring temper of the materials used. Furthermore, die wear can be materially reduced and metal clips do not have to be heat treated, these factors both contributing to an inexpensive item. It has been found that steel clips heat treated to a hardness between 35 and 45 Rockwell C are suitable, even though metal with this hardness is not generally considered a spring steel. It will, of course, be apparent that the use of softer or harder materials is contemplated.

Obviously, the fact that the clip shown in the drawings is formed of a single piece is an advantage since the blanks therefore, such as shown in FIGURE 7, can be formed in a single die stroke or in a single molding operation. In the case where a single piece molded plastic construction is utilized, an additional advantage is apparent, since the plastic clips offer greater resistance to certain of the chemicals employed in hair dressing fluids. Additional design variations are suggested with regard to the connecting means employed. Thus, a plurality of the upstanding tabs could be utilized, e.g., by providing a tab on either side of the crimp in arm 18 and providing recesses in the arm for receipt of the tabs. Any other connecting means which will provide for transmitting the force in arm 18 is, of course, contemplated.

It will be understood that various modifications may be made in the above disclosed clip construction which provide the characteristics of this invention without departing from the spirit thereof, particularly as defined in the following claims.

I claim:

1. A clip having an upper and a lower jaw with work engaging portions at one of the ends thereof and handle forming portions at the other ends thereof, said jaws having a pivot point between the ends thereof for pivoting the jaws relative to one another to enable the work engaging portions to be separated by force applied to the handle forming portions thereat, one of said jaws having a resilient jaw urging member extending from a point adjacent the work engaging end thereof toward the opposite end thereof and being unconnected with said one jaw for the remainder of the length thereof and the other jaw having a connecting means for said jaw urging member, said jaw urging member engaging with said connecting means to place the jaw urging member under initial com-

pression which applies a jaw closing force along the jaw urging member toward the base end thereof to urge the work engaging end of said one jaw toward the work engaging end of the other jaw, force applied to said handle-forming portions of the clip urging the work engaging portions of the clip apart against the restraining force of said jaw urging member.

2. The clip of claim 1 wherein said jaw urging member is provided with an outwardly extending finger engaging portion at the distal end thereof which provides a finger pressing handle for the clip which separates the work engaging ends of the jaws when compressed.

3. The clip of claim 1 wherein the entire clip is made of a single piece molded blank of synthetic plastic material having two jaw-forming sections connected at a hinge joint at the handle forming ends thereof, the two jaw-forming sections being folded at said joint into confronting relation, said jaw urging member being struck from one of the jaw-forming sections and including means which snaps into engagement with said connecting means.

4. A clip having an upper and a lower jaw with work engaging portions at one of the ends thereof and handle forming portions at the other ends thereof, said jaws having a pivot point between the ends thereof for pivoting the jaws relative to one another to enable the work engaging portions to be separated by force applied to the handle forming portions thereat, one of said jaws having a resilient jaw urging member extending from a point adjacent the work engaging end thereof toward the opposite end thereof and the other jaw having a connecting means engaging with said jaw urging member, the distance between the point of connection of said jaw urging member with the work engaging end of said one jaw and its point of connection with said connecting means being greater than the distance between said point of connection and said connecting means prior to their engagement, whereby the jaw urging member is placed under initial compression which bows the same outwardly when connected with said connecting means, said compression applying a jaw closing force along the jaw urging member toward the base end thereof to urge the work engaging end of said one jaw toward the work engaging end of the other jaw, said other jaw having a fulcrum-forming bend therein, said connecting means being positioned on the outer side of the bend in the latter jaw, the bend in the jaw extending through an opening in said one jaw where it connects with said jaw urging member through said connecting means to form the pivot point for the clip, force applied to said handle-forming portions of the clip urging the work engaging portions of the clip apart against the restraining force of said jaw urging member.

5. The clip of claim 4 wherein the point of connection of said jaw urging member with said connecting means is depressible through said opening to a point where the jaw urging member is bowed inwardly to hold the clip in an open position.

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