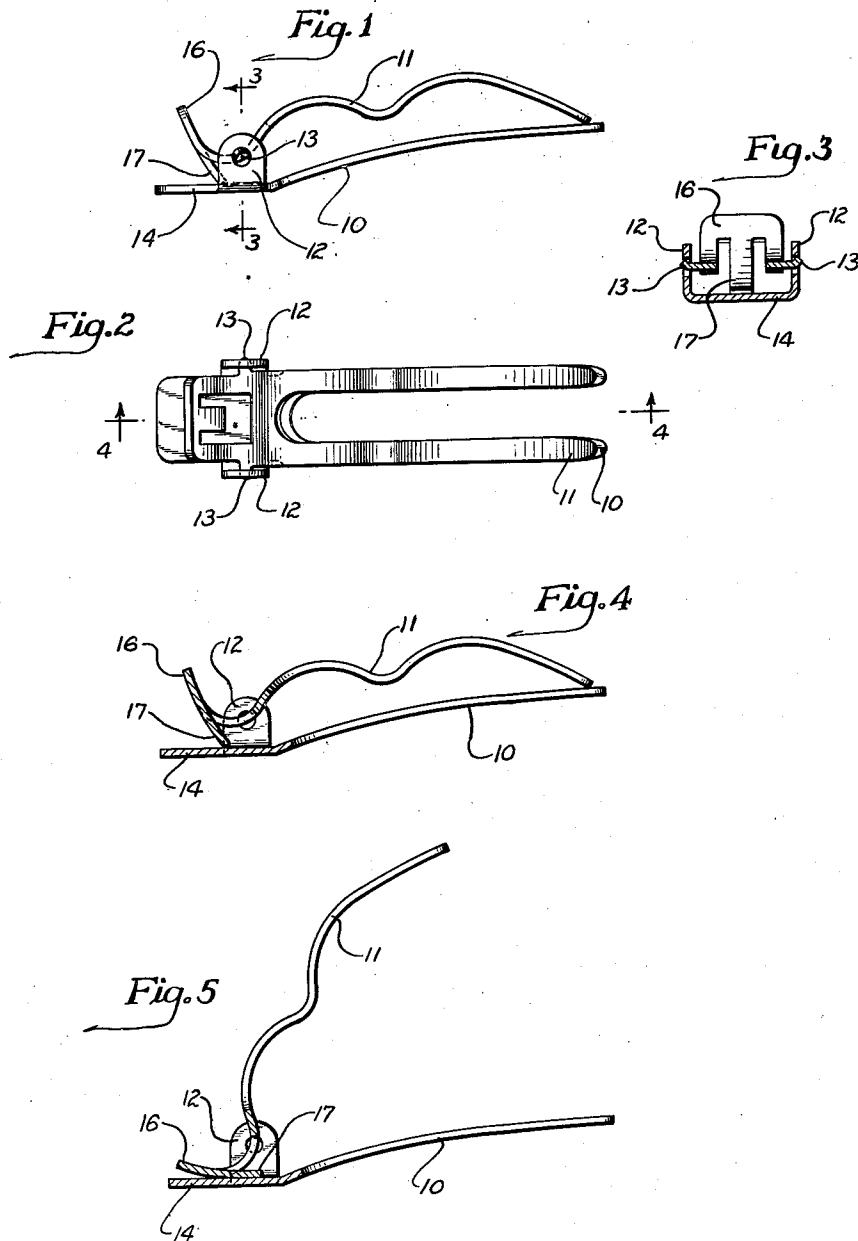


Aug. 8, 1950

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PIVOTED HAIR CURLING CLIP

2,517,971

Filed April 9, 1948



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UNITED STATES PATENT OFFICE

2,517,971

PIVOTED HAIR CURLING CLIP

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Application April 9, 1948, Serial No. 20,029

2 Claims. (Cl. 24-252)

1

My invention relates to an improved clip or clasp particularly adapted for supporting curls of natural hair during setting and after the curl has been formed, but having other uses as well.

At times, such as when hair is set in pin curls, it is desirable to have available a retaining device other than usual types of hair pins for holding the hair in position. When forming pin curls, for example, it is customary to use a clip having a pair of arms and a spring biased to force the arms together, so that the arms are held apart only by the action of the fingers; and when the finger engaging parts are released the hair engaging arms are immediately spring pressed toward each other. This type of clip is advantageous in that it retains a pin curl or the like in a desirable manner, but there is a considerable disadvantage in that this type of clip is relatively expensive and has the distinct disadvantage that the fingers quickly tire from constantly working against the force of the spring. Clips have been suggested which can be retained in open position and then actuated to bring the hair engaging arms together, but such slips have had several distinct disadvantages, including the disadvantage that by their very design the opening of the arms becomes a difficult operation, frequently requiring two hands.

In accordance with my invention, I provide a very simple form of clip consisting of only two parts so constructed and arranged, however, that the clip may be operated simply and quickly with only one hand but in which the arms, nevertheless, have the property of remaining open when they have been opened and being retained in a closed position with spring action after they have been closed.

The principal object of my invention is the provision of a clip which overcomes the disadvantages referred to hereinabove and has the structural and operating advantages described.

In the drawings I show a preferred embodiment of the invention in which:

Fig. 1 is an elevational view of a clip particularly adapted for holding pin curls;

Fig. 2 is a plan view.

Fig. 3 is a transverse sectional view taken on the line 3-3 of Fig. 1;

Fig. 4 is a sectional view taken on the line 4-4 of Fig. 2; and

Fig. 5 is a sectional view similar to Fig. 4, but showing the clip in open position.

In the embodiment of the invention shown, there is provided a lower arm 10 and an upper arm 11, the former having a pair of integral ears

2

12 set up at right angles thereto, and the latter having a pair of integral trunnions 13 for extending into pivot holes formed in the ears 12. The arm 10 is rounded slightly at its major dimension to approximately correspond to the outline of the head, and the arm 11 has a compound curve to adapt itself conveniently to the engagement of a pin curl. Both arms are shown bifurcated, a desirable form for my purposes, but it will be understood that the arms may comprise single arms of suitable width or multiple arms, and that they may have such suitable shape as the use may indicate.

The arm 10 has a tail piece 14, a portion of which serves as a cam as will be described, and the arm 11 has a tail piece 16, the two tail pieces defining between them approximately a 60 degree angle when the clip is closed, namely, in the position shown in Figs. 1 and 4. Thus, the arms 10 and 11 comprise in effect bell crank levers with the major portion of the levers comprising the hair engaging arms and a portion generally beyond the pivot forming finger engaging portions for forcing the arms apart. It will be noted that the ears 12 are formed up from the tail piece 14, and that the tail piece 14 is almost flat over its entire dimension although extending slightly at an angle from the remaining portion of the arm 10. The tail piece 16, however, is formed by making a sharp curve from the portion of the arm 11 carrying the trunnions 13.

I have referred to the spring action which is obtained between the arms 10 and 11 and this is obtained by forming on the tail piece portion 16 of the arm 11 an integral lug 17 which extends down into contact with, and rides on the top surface of the tail piece 14. The lug 17 being cut away from the material comprising the upper arm in the manner particularly shown in Fig. 3, has a decided spring action and functions in a way as an over-center spring mechanism on opposite sides of a virtual pivot about which the arms move. Although the tail piece 14 appears to be perfectly flat, it is in the nature of an inclined plane so far as the pivot point is concerned. When pressure is applied with the thumb on the tail piece 16, there is a slight bending of the lug 17 and a storing up of a slight amount of spring energy therein. This occurs until the parts are almost to the position shown in Fig. 5 at which time the arms spring slightly apart and are held apart by the action of the spring lug 17. Fig. 5 shows the position of full opening of the arms and in this position there

is still spring pressure of the lug 17 against the cam portion and the tail piece 14 so that the trunnions 13 are held tightly against the top of the holes in the ears 12 and there is no tendency for the two clip members to rattle or move in any direction with respect to each other. To bring the arms 10 and 11 together in hair engaging relation, pressure is gently applied to the top of arm 11 causing it to begin its movement toward arm 10. During the very first portion of this movement, there is a slight increase of tension in the spring lug 17, but as soon as the end of the lug reaches a point slightly to the rear of the pivot point, the energy stored in the spring forces it to the opposite side of center and causes the two arms to come together with a snap action. This puts the parts in the position shown in Fig. 4 in which there is still energy stored in the spring lug 17 and there is no rattling or slight movement of the two parts with respect to each other.

It will be understood that the movement of the spring lug 17 with respect to the tail piece 16 is only relatively very slight, but it is still adequate to accomplish the definite spring function and snap action desired in a device for the intended use. There is, also, the very great advantage that at no time is the action stiff or difficult and even a woman beauty operator can use clips of my design all day long without appreciable tiring of the fingers. The action, as previously noted, requires very little movement of the spring member and, therefore, the dimensions of the parts must be closely maintained. I have obtained exceptionally good results by completely automatic production in which the parts are stamped from relatively thin stock and automatically assemble in an assembly die so that precise dimensions in formation and assembly are maintained.

While excellent results are obtained by employing substantially my exact construction, those skilled in the art will understand that considerable modification within the scope of the claims is possible. The two arms, obviously, are in the nature of bell crank levers with one portion shaped to engage an object, such as a curl of hair, and the portion on the opposite side comprising tail pieces engageable by the fingers to separate the object engaging portions, and mutually engaging to function as an over-center spring mechanism without use of separate spring members. In the claims, reference is made to upper and lower members, but such terms are used without limitation to the scope of the claims, but only to clarify definition of functionally related parts.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A hair clip comprising a pair of relatively long superposed arms, a pivotal connection between the arms providing hair-engaging portions on one side of the pivot and finger-engageable tail portions on the opposite side of the pivot, the hair-engaging portions being normally closed and the tail portions being in diverging relation to provide for separating the hair-engaging portions to a predetermined extent about

said pivotal connection, one of said tail portions presenting a substantially flat camming surface extending from one side of the pivotal connection to the other, and a spring lug projecting from the other tail portion and having a free end in constant pressure engagement with said surface and being positioned at one side of said pivotal connection when the hair-engaging arm portions are closed and being positioned on the opposite side of the pivotal connection when the hair-engaging arm portions are in the predetermined separated relation, said other tail portion diverging from said first tail portion, said lug being unitary with said other tail portion and being disposed in substantially the same divergence, and said other tail portion and said lug engaging the first tail portion for limiting the separation of said hair-engaging portions to said predetermined extent.

2. A hair clip comprising a pair of relatively long superposed arms, a pivotal connection between the arms providing hair-engaging portions on one side of the pivot and finger-engageable tail portions on the opposite side of the pivot, the hair-engaging portions being normally closed and the tail portions being in diverging relation to provide for separating the hair-engaging portions to a predetermined extent about said pivotal connection, one of said tail portions presenting a substantially flat camming surface extending from one side of the pivotal connection to the other, and a spring lug projecting from the other tail portion and having a free end in constant pressure engagement with said surface and being positioned at one side of said pivotal connection when the hair-engaging arm portions are closed and being positioned on the opposite side of the pivotal connection when the hair-engaging arm portions are in the predetermined separated relation, said other tail portion being provided with a rectangular opening defined in part by a bar at the free end of the tail portion and said lug extending integrally from said bar, and said hair-engaging portions being bifurcated and providing pairs of forks in superposed relation.

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