

[72] Inventor **Douglas V. Vitrakis**
50 Watertown Road, Thomaston, Conn.
06787
 [21] Appl. No. **836,109**
 [22] Filed **June 24, 1969**
 [45] Patented **Sept. 7, 1971**

2,838,056	6/1958	Kertesz.....	132/48
1,287,329	10/1918	Jennings.....	128/354
2,980,118	4/1961	Bolinger.....	132/48
3,106,214	10/1963	Reiner.....	132/48
3,335,734	8/1967	Kackloudis.....	132/40

Primary Examiner—Louis G. Mancene
Assistant Examiner—Gregory E. McNeill
Attorney—Wooster, David and Cifelli

[54] **ONE-PIECE CLIP**
4 Claims, 7 Drawing Figs.

[52] U.S. Cl..... **132/48,**
24/255.1
 [51] Int. Cl..... **A45d 18/24**
 [50] Field of Search..... **132/48,**
46.1, 40; 24/248 HC, 252 HC, 253, 255, 248 SL;
128/325, 346, 354, 321

[56] **References Cited**
UNITED STATES PATENTS
 966,325 8/1910 Gilbert..... **24/255.1**

ABSTRACT: There is disclosed a one-piece hair clip formed from a blank bent at its midportion into a double ogee spring. The ends of the blank extend from the spring in one direction and form cooperating jaws. Spaced extensions of the jaws extend from the spring in the opposite direction and form actuating handles.

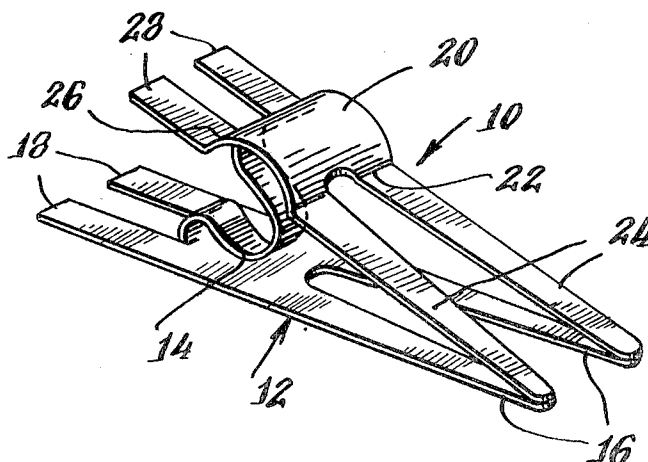


Fig. 1.

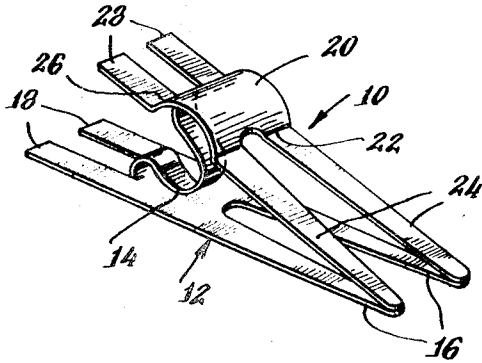


Fig. 2.

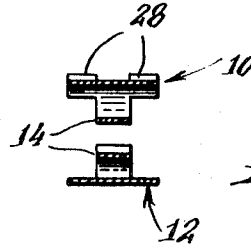
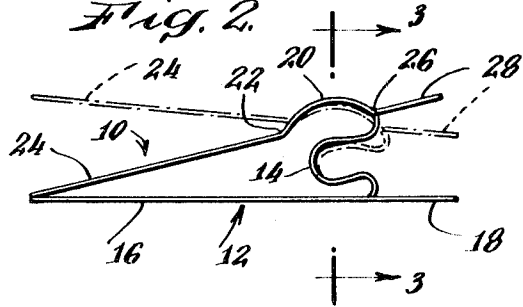


Fig. 3.

Fig. 4.

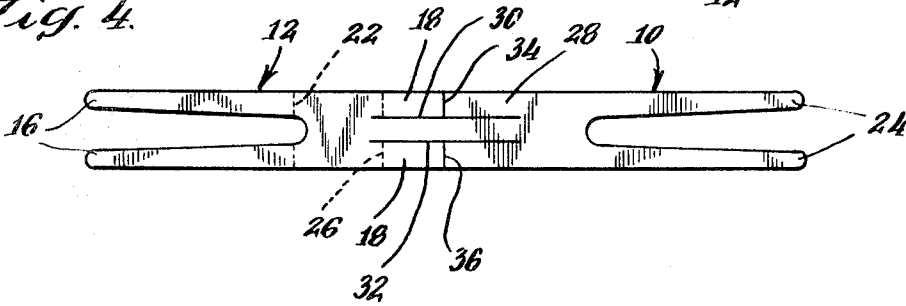


Fig. 5.

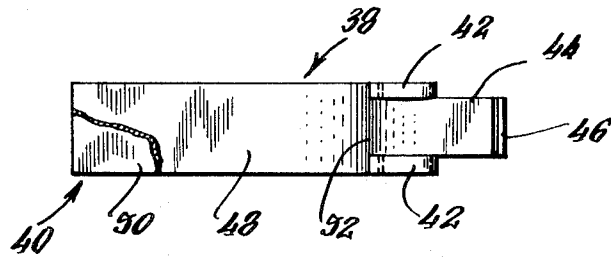


Fig. 7.

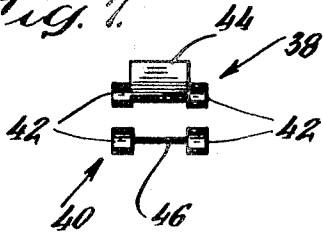
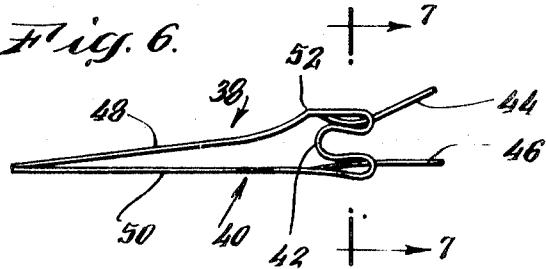


Fig. 6.



INVENTOR.

Douglas V. Valtakis

BY

Worster, Davis & Lepell

ATTORNEYS.

ONE-PIECE CLIP

BACKGROUND OF THE INVENTION

Simple spring clips are widely used for many applications, including hair setting. Most commonly, these clips are formed from several parts which must be assembled. Clips of this type have also been made of unitary construction, being stamped and formed from a single blank. However, prior art clips of the one-piece type have not been particularly successful for a number of reasons. For example, in many such constructions a fulcrum of some type is required and, accordingly, some type of tab must be struck from one portion of the blank and formed over a different portion. Secondly, in many such clips the force required to operate the spring and open the jaws is greater than would be desired. Third, many such clips require that the blank be folded upon itself by means of a relatively sharp crease. This is difficult to achieve, particularly when employing a resilient material, and also serves to weaken the clip at the crease. Furthermore, many such clips require several mechanical operations for their formation and, accordingly, are more expensive than would be desirable.

Accordingly, it is a primary object of the present invention to provide an improved one-piece clip which may be readily formed on existing machinery, has an easily operable jaw spring, and requires no fixed fulcrum or pivot point.

SUMMARY OF THE INVENTION

In accordance with this invention there is provided an one-piece clip comprising an elongated blank which is bent at its central portion into a double ogee resilient spring. First and second cooperating jaw portions extend in a first direction from the spring. Spaced handle portions, which form extensions for the jaws, extend in a second direction from the spring.

BRIEF DESCRIPTION OF THE DRAWING

The manner in which the objects of this invention are achieved will be best understood by reference to the following description, the appended claims and the FIGS. of the attached drawing wherein:

FIG. 1 is a perspective view of a clip in accordance with this invention;

FIG. 2 is a side view of the clip of FIG. 1, its operation being shown by broken lines;

FIG. 3 is a cross section taken substantially along the line 3—3 of FIG. 2;

FIG. 4 is a plan view of a blank for forming the clip of FIGS. 1—3;

FIG. 5 is a plan view, partially broken away, of a modified form of the clip of this invention;

FIG. 6 is a side view of the clip of FIG. 5; and

FIG. 7 is a cross section taken substantially along the line 7—7 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIGS. 1—3 there is illustrated a hair clip including an upper portion 10, a lower portion 12, and a double ogee spring portion 14 integral therewith. Lower portion 12 comprises a bifurcated lower jaw 16 extending in one direction from the spring 14 and a bifurcated handle portion 18 extending in the opposite direction. It will be noted that the lower portion 12 is substantially planar. Upper portion 10 includes a curved central region 20 which substantially continues the upper curve of ogee spring 14, as will be apparent from FIG. 2. However, it is slightly creased along the line 22 and from this crease extends the bifurcated upper jaw 24. From a parallel crease line 26, at the opposite side of spring 14, extends the bifurcated handle portion 28, substantially coplanar with the upper jaw 24. These crease lines permit the handle and jaw portions to be more closely spaced while not interfering with the spring action.

The double ogee spring of this invention serves several important functions. It is for example, substantially more

resilient than the usual single curve spring as it provides, in effect, the combined resilience of three such single springs. Also, it provides a much more versatile clip because the spring may be stretched, permitting the jaws to clamp objects even thicker of the normal jaw spacing. The easy operation of the spring is further enhanced by the extending handle portions 18, 28 which provide increased leverage for the user. This operation is illustrated by broken lines in FIG. 2 wherein the jaws are shown in their open position. A further and important feature of the spring is that it may be quite readily formed on existing machinery, such as standard four-slide machines. All these features contribute to the novel characteristics of the illustrated clip.

In FIG. 4 there is illustrated the blank from which the one-piece clip of FIGS. 1—3 is formed. The reference numerals employed in describing the clip are also applied to the blank so that it may be readily correlated with the finished clip. The blank is slit longitudinally along lines 30, 32 to permit formation of the spring 14 and is slit transversely along lines 34, 36 to form the handle portions 18, 28.

In FIGS. 5—7 there is illustrated a modified form of the clip of the invention. In this modified clip the upper portion 38 and lower portion 40 also extend from the ends of an ogee spring portion 42. Integral upper handle 44 and lower handle 46 extend from the respective upper and lower portions 38, 40 in one direction and, in the opposite direction, the upper and lower portions form cooperating solid jaws 48, 50. It will be noted that, in this modification, the blank has been cut and formed to provide two ogee springs, one on each side of the handle portion, rather than a single spring as in the previously described embodiment. Also, a single crease line 52 on upper portion 38 forms the boundary between upper jaw 48 and upper handle portion 44, these portions being curved as shown in FIG. 6 to provide suitable jaw engagement and handle displacement.

It is believed that the many advantages of this invention will now be apparent to those skilled in the art. It will also be apparent that a number of variations and modifications may be made in this invention without departing from its spirit and scope. Accordingly, the foregoing description is to be construed as illustrative only, rather than limiting.

What is claimed is:

1. A one-piece clip comprising an elongated blank bent at its central portion into a double ogee resilient spring and including first and second cooperating jaw portions extending in a first direction therefrom and spaced first and second handle portions forming extensions of said respective jaw portions extending in a second direction from said spring, said first jaw portion including an outwardly laterally extending curved central region adjacent to said double ogee resilient spring and substantially continuing the curve thereof and creases formed at the junctures of said curved central region with the remainder of said first jaw portion and with said first handle portion said juncture of said first handle portion and said curved central region being substantially at a point of transition between said curved central region and said double ogee spring.

2. The clip of claim 1 wherein said spring comprises first and second double ogee spring portions formed on either side of said handle portions.

3. The clip of claim 2 wherein each of said jaw portions is substantially rectangular.

4. A one-piece clip comprising an elongated blank bent at its central portion into a double ogee resilient spring and including first and second cooperating jaw portions extending in a first direction therefrom and spaced first and second handle portions forming extensions of said respective jaw portions extending in a second direction from said spring, each of said handle portions being bifurcated and said spring being formed from the portion of said blank intermediate the bifurcations prior to bending, said first jaw portion including an outwardly laterally extending curved central region adjacent to said double ogee resilient spring and substantially continuing the curve thereof and creases formed at the junctures of said curved central region with the remainder of said first jaw portion and with said first handle portion.