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A. BRAGA

3,047,927

SPRING CLIP

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FIG. 1.

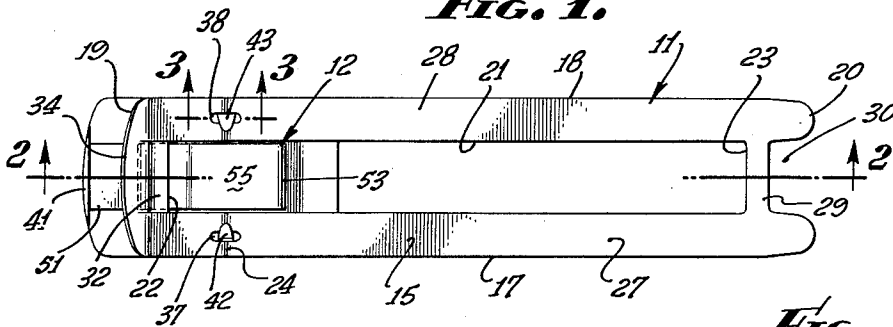


FIG. 2.

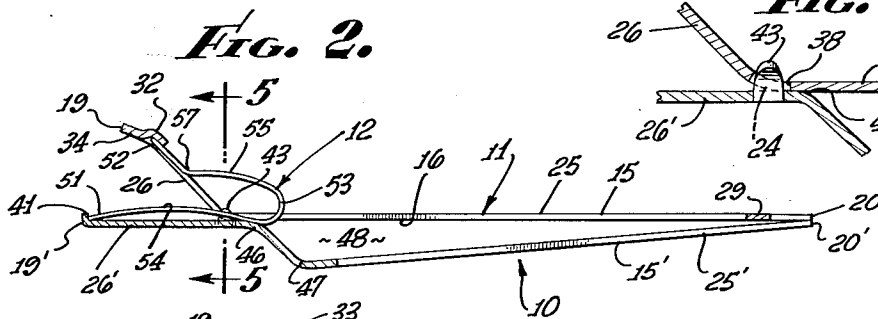


FIG. 3.

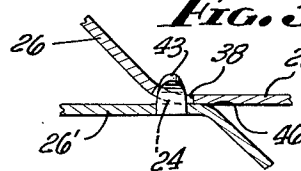


FIG. 4.

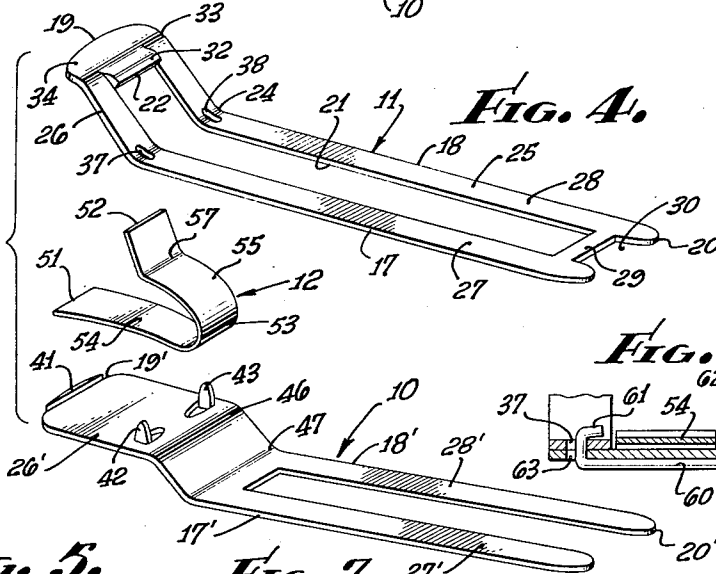


FIG. 6.

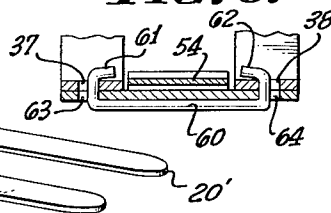


FIG. 5.

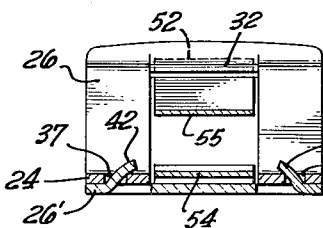
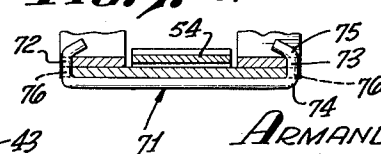


FIG. 7.



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3,047,927

SPRING CLIP

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5 Claims. (Cl. 24-252)

This invention relates to spring clips, adapted to be designed for performing any special function, as, for example, for holding papers together, for hanging garments, etc. I have chosen to illustrate and describe the invention as the same may be embodied in a hair curl clip.

The clips of this invention are characterized as comprising two separately formed levers which are fulcrumed against each other between the respective ends thereof, each lever comprising a jaw portion and a finger grip portion, the levers being attached to each other at the fulcrum, and there being a separately formed spring for normally biasing the levers to a closed position in which the jaws clasp the object or objects to be clipped. Economy in manufacture results from forming the spring separately from the lever in that only the spring and not the levers be hardened and tempered.

A general object of this invention is to provide a clip of the above mentioned character which is adapted to be manufactured economically, is rugged in construction, is easily and simply assembled, and is reliable in operation.

When the clip of this invention is embodied in a hair curl clip of conventional jaw and finger grip design, it is especially economical in manufacture because the invention eliminates the need for forming outwardly extending lugs of prior art clips to secure the levers together at their fulcrum. Elimination of such lugs substantially reduces waste of the blank material from which the levers are stamped.

Further objects and advantages of the invention will appear during the course of the following part of this specification wherein the details of construction and mode of operation of certain preferred embodiments of the invention are described with reference to the accompanying drawing, in which:

FIG. 1 is a plan view of a hair curl clip embodying the invention;

FIG. 2 is a central longitudinal section through the clip;

FIG. 3 is a detail section taken on line 3-3 of FIG. 1;

FIG. 4 is an exploded view of the clip showing the respective parts thereof in perspective before assembly;

FIG. 5 is an enlarged cross section taken on line 5-5 of FIG. 2;

FIG. 6 is an enlarged cross section similar to FIG. 5, and showing another form of means for securing parts of the clip together; and

FIG. 7 is a cross section similar to FIG. 6, and showing still another arrangement for securing parts of the clip together.

Referring to the drawing in greater detail, the hair curl clip shown therein consists of a lower lever member 10, an upper lever member 11, and a spring strip 12. The lever members may be formed from any suitable stiff material, e.g. metal, plastics, etc. The lever members of the illustrated embodiment are such as may be stamped out from a flat blank or sheet (not shown) of aluminum. The spring strip 12 is of spring steel. Inasmuch as the spring strip is formed separately from the lever members, only the spring strip need be hardened and tempered.

The upper lever member 11 has an outside surface 15, an inside surface 16, and is defined by two straight and parallel side edges 17 and 18 and end edges 19 and 20. The central portion of the member 11 is cut out leaving an elongate opening 21 extending from proximate end

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edge 19 as an edge 22 defining one end of the opening, to proximate end edge 20 as an edge 23 defining the other end of the opening. The member 11 is bent along a transversely extending bend 24 to provide a jaw portion 25 and a finger grip portion 26, the grip portion extending at an angle upwardly and endwardly from the jaw portion.

The opening 21 divides the jaw portion 25 into two parallel arms 27 and 28, these being interconnected proximate end 20 by a cross brace 29. The two arms extend beyond the cross brace, a cut-out at 30 being made to define one edge of the brace and the inside edges of the extensions of the arms. The cuts for the side edges which define the opening 21 are extended slightly beyond the edge 22 to form a lip 32. The grip is bent slightly downwardly along a transversely extending bend line 33 proximate end edge 19 to provide a finger engaging portion 34 for the grip.

At the bend 24, the arms 27 and 28 have apertures 37 and 38 formed therein respectively. These apertures serve to receive fasteners for securing the lower and upper lever members together as will be explained hereinafter.

Referring now to the details of construction of the lower lever member 10 of the illustrated embodiment, it is stamped out as a flat elongate strip having dimensions substantially equal to corresponding dimensions of the strip from which the upper lever member is formed. The surfaces, edges, and portions of the lower lever member which correspond with the surfaces, edges, and portions, respectively, of the upper lever member are designated by the same reference numerals as are applied to the upper lever member, but a prime (') is added to each numeral where that numeral is used to designate a surface, edge or portion of the lower lever member.

End edge 19' of the lower lever member is turned up as a narrow flange 41 which serves as a stop for the spring strip as will be described hereinafter. Spaced from the flange 41 and aligned transversely of the lever member are two spaced apart tongues 42 and 43 which are struck up from the inside surface of the lever member to extend in respective planes longitudinally of the lever member. These tongues are long enough to extend through the apertures 37 and 38 of the upper lever member and be bent over to the outside surface of the upper lever member, as appears best in FIG. 5 of the drawing, thereby to secure the lever members together at the bend 24. Thus, the upper lever member is superposed upon the lower lever member with the members bearing against each other along the inside of bend 24, and the bend serves as a lever fulcrum for the members with respect to each other for operating the clip from a clamping position to an open position. When the clip is in its clamping position, the jaws thereof are closed upon opposite sides of the clasped object, and the finger grips diverge from each other at the fulcrum. In its open position, i.e. when the grips are pressed toward each other, the jaws diverge at the fulcrum.

The lower lever member is bent along a transversely extending line 46 in the jaw portion thereof, and bent again along line 47 to provide a space 48 between the jaw portions of the lever members for accommodating a hair curl. The arms of the bifurcated jaw portion of the lower lever member are not interconnected as is the case for the upper lever member at cross brace 29.

The spring strip 12 has end edges 51 and 52 and a permanent bend or curved portion 53 between its ends to form the spring to an open loop configuration having a lower leg portion 54 and an upper leg portion 55. The lower leg is slightly longer than the upper leg and is of a length such that when its end 51 is abutted against the narrow flange 41, the curved portion 53 of the spring

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will be spaced from the fulcrum 24 on the jaw side of the fulcrum. The strip from which the spring is formed is narrow enough to extend through the opening 21 of the upper lever member. There is a slight bend 57 in the spring so that the end 52 of the upper leg of the spring will seat well under the lip 32 of the grip of the upper lever member.

It will be apparent that the spring may be easily positioned in the clip as by squeezing the spring legs toward each other to permit insertion of the spring legs through the opening 21 of the upper lever member whereby the spring may be pushed in between the grips to a position where the end 51 of the spring will abut the flange 41. Inserting the spring, as above described, will locate the end 52 thereof under the lip 32 of the upper grip, the lower leg thereof upon the inside surface of the lower grip, and the curved portion 53 curving above the outside surface of the upper lever member where the spring is free to flex for opening and closing the clip.

Referring to FIG. 6, wherein is shown another form of means for securing the lever members together at their fulcrum, the illustrated alternate securing means comprises a wire or staple 60, having two finger portions 61 and 62 which extend through passageways in the form of apertures 63 and 64 made in the lower lever member. The staple fingers extend through apertures 37 and 38 in the upper lever member which are aligned with the apertures 63 and 64 respectively, whereby the ends of the staple fingers may be bent over the top surface of the upper lever member at the fulcrum to secure the lever members together.

In FIG. 7, still another modification of the securing means is illustrated. It comprises a staple 71 which extends transversely of the outside surface of one of the lever members. End portions or fingers 72 and 73 of the staple 71 are bent at corners 74 to extend across the side edges of the lever members and the fingers are then bent again at 75 over the outside surface of the other lever member. Passageways may be formed in the side edges of the lever members as notches 76 for accommodating the fingers of the staple.

While the instant invention has been shown and described herein, in what are conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein, but is to be accorded the full scope of the claims.

What I claim is:

1. A spring clip comprising two elongate members, each having an inside surface and an outside surface and each comprising a jaw and a grip, one member having a transversely extending bend formed therein along which the grip of said one member extends at an angle from the jaw of said one member, the members being arranged with their inside surfaces toward each other and with said bend bearing against the other member to provide a lever fulcrum, laterally extending means securing the members to each other at the fulcrum, and a spring member having a bight portion and two end portions, the end portions of the spring member being in engagement with

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the inside surfaces of the grips respectively and the bight portion of the spring member being disposed on that side of said securing means which is opposite the grips, said means for securing the members to each other comprises a pair of tongues struck to extend from the inside surface of one member, the other member having a pair of apertures formed therein and in alignment with said tongues respectively, the tongues extending through the apertures respectively and being bent laterally over the outside surface of the other member.

2. The spring clip of claim 1 in which one of the grips has a slight flange extending out from the inside surface thereof, one end of the said spring being in abutment with the flange.

3. A spring clip comprising two elongate members, each having an inside surface and an outside surface and each comprising a jaw and a grip, one member having a transversely extending bend formed therein, along which the grip of said one member extends at an angle from the jaw of said one member, the members being arranged with their inside surfaces toward each other and with said bend bearing against the other member to provide a lever fulcrum, laterally extending means securing the members to each other at the fulcrum, and a spring member having a bight portion and two end portions, the end portions of the spring member being in engagement with the inside surfaces of the grips respectively and the bight portion of the spring member being disposed on that side of said securing means which is opposite the grips, said means for securing the members to each other comprises a thin wire staple, the members having passageways formed therein, the staple having respective finger portions extended through respective passageways and being bent laterally at their ends upon the outside surface of one of the members.

4. A spring clip according to claim 3 in which said passageways consist of aligned sets of apertures formed in the lever members.

5. A spring clip according to claim 3 in which said passageways consist of a set of aligned notches formed in the side edges of the members.

References Cited in the file of this patent

UNITED STATES PATENTS

253,414	Neal	Feb. 7, 1882
850,903	Bulkley	Apr. 23, 1907
1,358,560	Kennison	Nov. 9, 1920
2,031,377	Lindsay	Feb. 18, 1936
2,459,452	Reiner et al.	Jan. 18, 1949
2,464,739	Solomon et al.	Mar. 15, 1949
2,505,719	Peck	Apr. 25, 1950
2,655,927	Ammen	Oct. 20, 1953
2,687,737	Schildt	Aug. 31, 1954
2,767,720	Harridge	Oct. 23, 1956
2,833,292	Wirsing	May 6, 1958
2,849,008	Otten	Aug. 26, 1958

FOREIGN PATENTS

158,301	Great Britain	Feb. 10, 1921
1,151,830	France	Aug. 26, 1957