June 25, 1968 A. SIDELMAN 3,389,709

SNAP ACTION HAIR HOLDING MEANS

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Fig. 1.

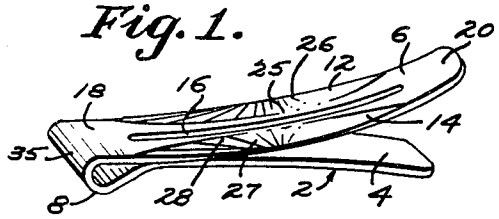


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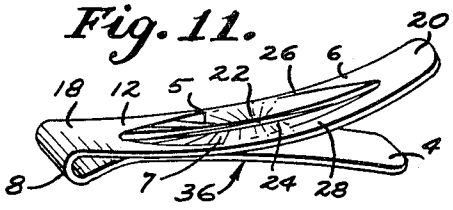


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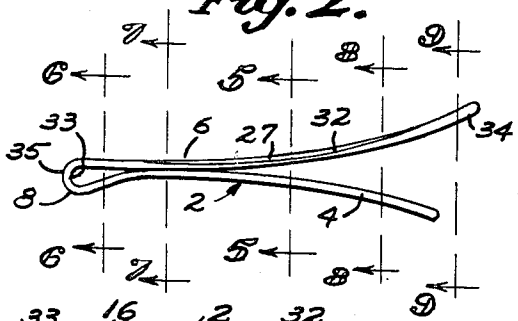
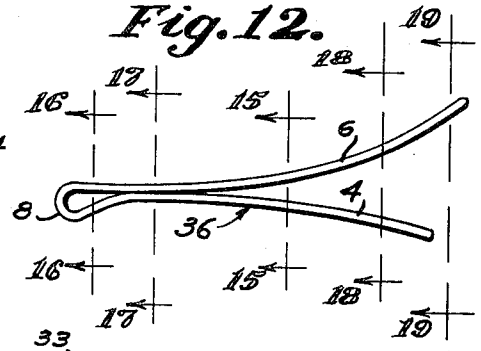


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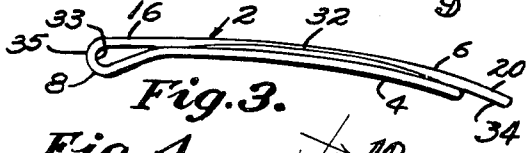


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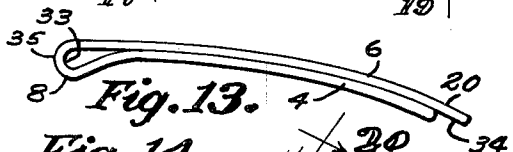


Fig. 13.

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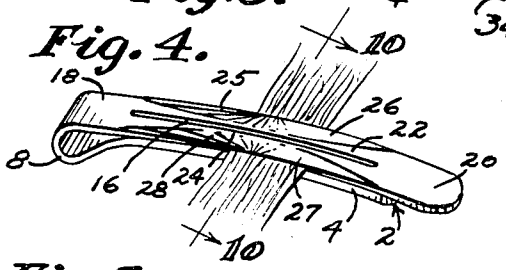


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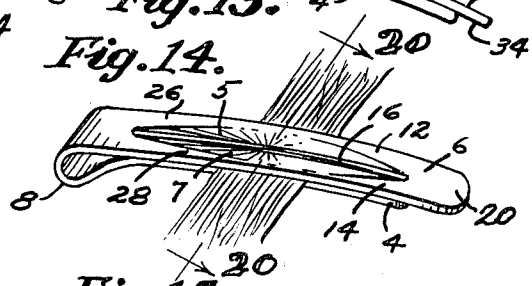


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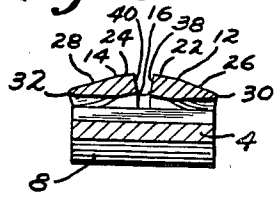


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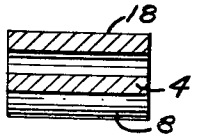


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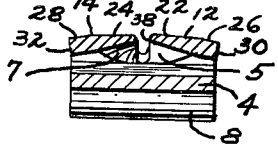


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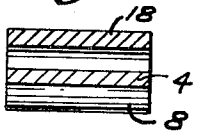


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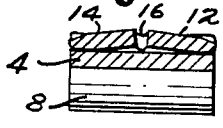


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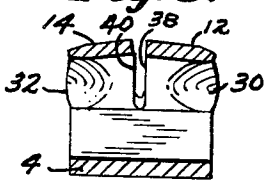


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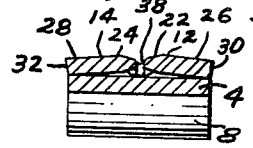


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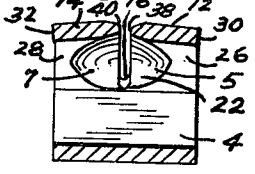


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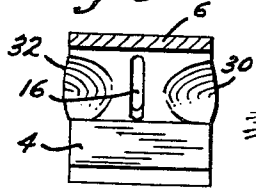
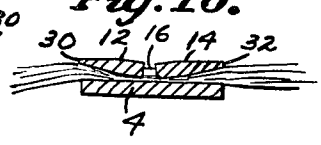


Fig. 10.



INVENTOR

Abraham Sidelman

BY Herman J. Glass

ATTORNEY

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SNAP ACTION HAIR HOLDING MEANS

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Fig. 19.

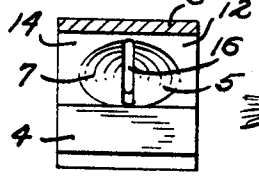


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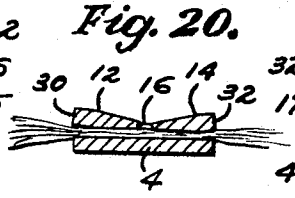


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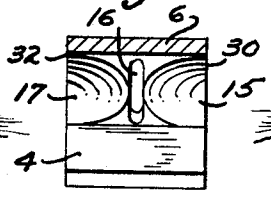


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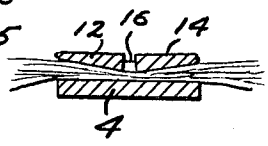


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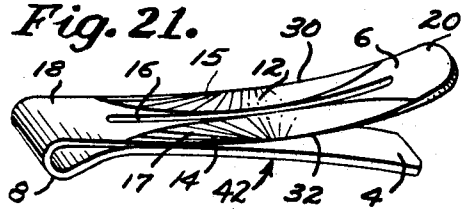


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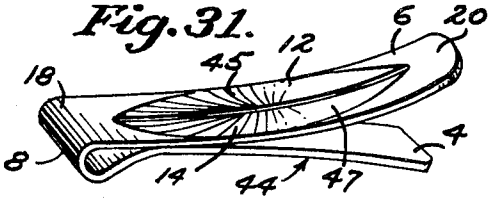


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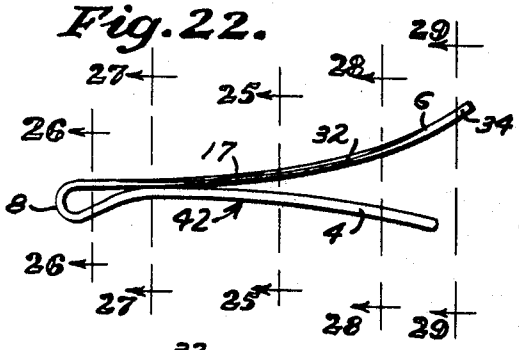
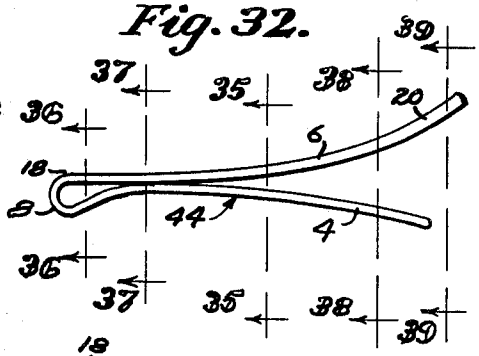


Fig. 32.



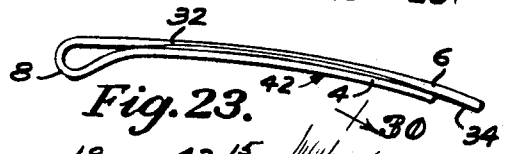


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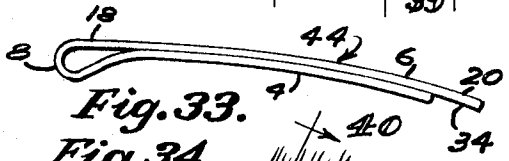


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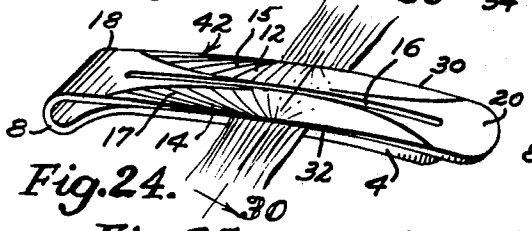


Fig. 24.

Fig. 34.

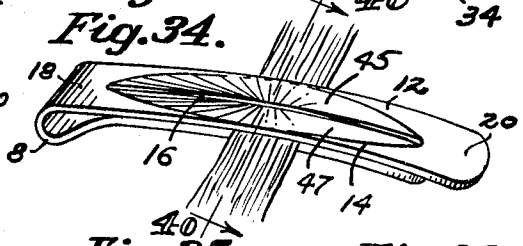


Fig. 25.



Fig. 26.

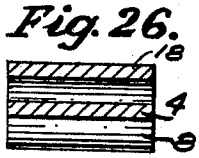


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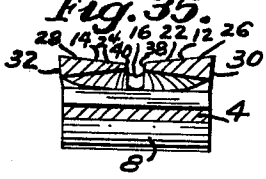


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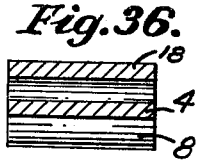


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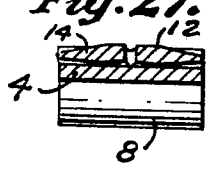
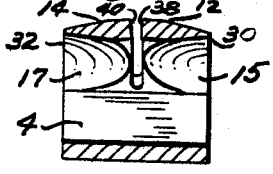


Fig. 28.



INVENTOR

Abraham Sidelman

BY

ATTORNEY

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Fig. 37.

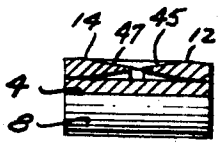


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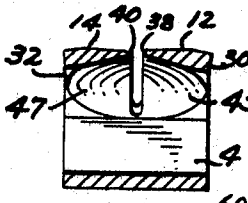


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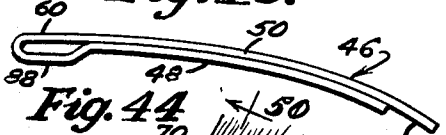


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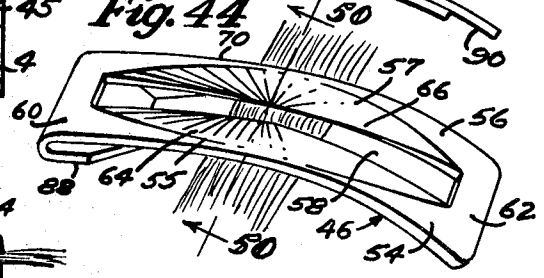


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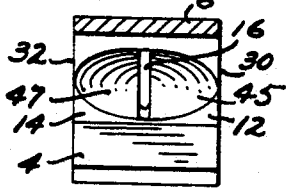


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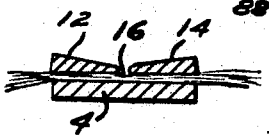


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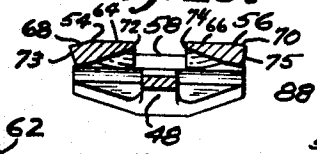


Fig. 46.



Fig. 41.

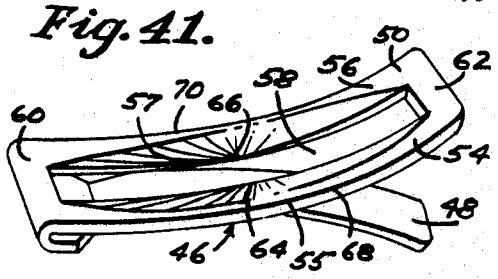


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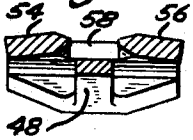


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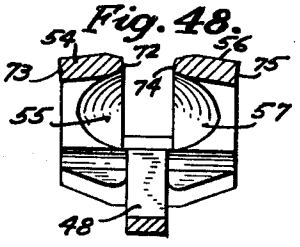


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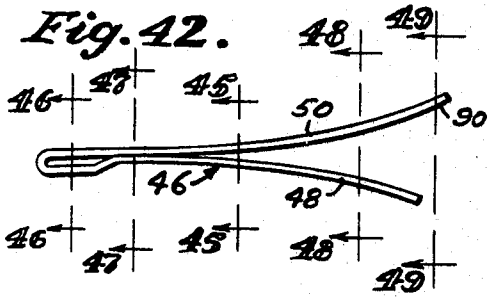


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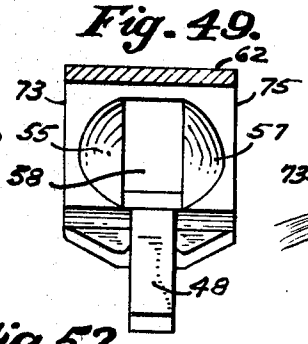


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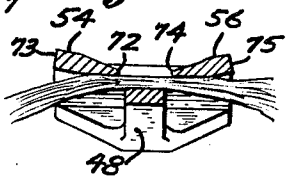


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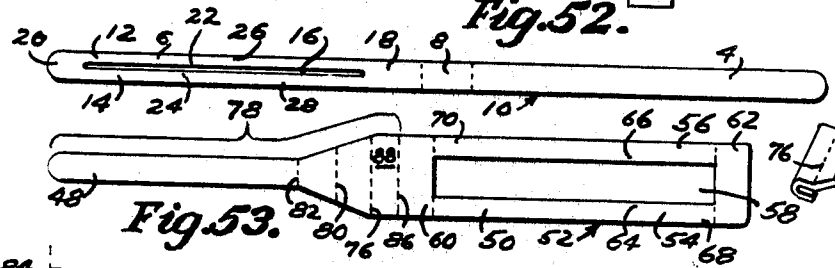


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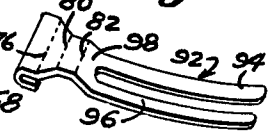


Fig. 53.

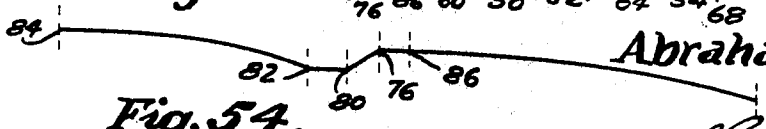


Fig. 54.

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BY

ATTORNEY

United States Patent Office 3,389,709 Patented June 25, 1968

3,389,709

SNAP ACTION HAIR HOLDING MEANS

Abraham Sidelman, 13 Doctor Frank Road, Spring Valley, N.Y. 10977

Continuation-in-part of application Ser. No. 265,383, Mar. 15, 1963. This application Mar. 4, 1966, Ser. No. 531,668

4 Claims. (Cl. 132—46)

ABSTRACT OF THE DISCLOSURE

Easily manipulated and easily operated snap action bobby pins, comfortable for wearing and economically manufactured, and pleasingly and neatly appearing at all times, comprising a pair of opposing arms and a loop connection normally urging the arms towards each other, one of said arms having two spaced apart strips and a longitudinal segment at one edge thereof being under an expanding tension in relation to the adjacent segment of the same strip, said longitudinal segment being thinner than said adjacent strip and said strips having substantially smooth surfaces.

This application is a continuation-in-part of my copending application Ser. No. 265,383, filed on Mar. 15, 1963, entitled, Snap Action Hair Clip, now abandoned.

This invention relates to snap action hair holding means and more particularly to such hair holding means of the type commonly known as bobby pins and also to hair holding means generically referred to as hair clips.

The snap action bobby pins, and the snap action hair clips, of this invention are easily operated, comfortable to wear and economical to manufacture. Also, the construction of the snap action bobby pins, and of the snap action hair clips, of this invention is such that they are easily manipulated by the user from open position to closed position and likewise from closed position to open position and remain in open position or in closed position, as desired, until ready for use by the wearer. The snap action bobby pins, and the snap action hair clips, of this invention are of such construction that they are always pleasingly and neatly appearing, both prior to use by the wearer and when positioned in closed position in the hair, irrespective of the number of times they are used.

Heretofore, bobby pins have been of such construction that they were difficult to manipulate, that is, their legs were difficult to open for insertion in the hair, and the users of such prior known and available bobby pins have found it necessary to use their teeth, or other means, to separate the legs thereof. Also, in many cases with respect to said heretofore known bobby pins the users have used their fingernails to separate the legs with the result that the nails have become broken or otherwise damaged.

Each of the snap action bobby pins, and the snap action hair clips, of this invention has two arms connected at at least one of their end portions. More particularly, each of the snap action bobby pins and the snap action hair clips has a loop connection normally urging said arms towards each other. One of said arms has two first spaced-apart strips, and two second spaced-apart strips transversely positioned with respect to said two first spaced-apart strips, and said second spaced-apart strips connect said first spaced-apart strips. At least a longitudinal segment, or a portion, at one edge of each of said first two spaced-apart strips is made thinner than the adjacent segment, or portion, of the same strip by being worked upon by swedging, by peening, by cold rolling, or by any combination thereof. As the result of being so worked upon, said longitudinal segment at one edge of each of the first

spaced-apart strips is placed under an expanding tension in relation to the adjacent segment of the same strip. Also, said two first spaced-apart strips have substantially smooth surfaces. Said arm, including said two first spaced-apart strips and said two second spaced-apart strips, assumes a bowed condition in one direction and can be snapped to a reverse bowed condition. When said arm is snapped so that its end points away from the other arm, it is in open condition. When it is snapped so that its end points towards the other arm, it is in closed position.

In the snap action bobby pins of this invention, the arms and the loop connection thereof are of substantially uniform width, the maximum width thereof being preferably about ¼ inch.

An object of this invention is to provide a snap action bobby pin easily operated or manipulated, comfortable to wear, economical to manufacture, and pleasingly and neatly appearing prior to use by the wearer and also when positioned in operating or closed position in the wearer's hair, irrespective of the number of times said bobby pin is used.

Another object of this invention is to provide a snap action bobby pin having its arms and loop connection of substantially uniform width and being easily operated or manipulated, comfortable to wear, economical to manufacture, and pleasingly and neatly appearing prior to use by the wearer and also when positioned in operating or closed position in the wearer's hair, irrespective of the number of times said bobby pin is used.

Another object of this invention is to provide a snap action bobby pin having its arms and loop connection of substantially uniform width, the maximum width being preferably about ¼ inch, and being easily operated or manipulated, comfortable to wear, economical to manufacture, and pleasingly and neatly appearing prior to use by the wearer and also when positioned in operating or closed position in the wearer's hair, irrespective of the number of times said bobby pin is used.

Another object of this invention is to provide a snap action hair clip easily operated or manipulated, comfortable to wear, economical to manufacture, and pleasingly and neatly appearing prior to use by the wearer and also when positioned in operating or closed position in the wearer's hair, irrespective of the number of times said hair clip is used.

Other objects and features of my invention will become apparent from the following detailed description which is merely illustrative of my preferred embodiments and is not limiting.

Like numbers designate like parts.

FIGURE 1 is a view in perspective of one embodiment of the snap action bobby pin of this invention in open position.

FIGURE 2 is a front elevational view of the snap action bobby pin of FIGURE 1 shown in open position.

FIGURE 3 is a front elevational view of the snap action bobby pin of FIGURE 1 shown in closed position.

FIGURE 4 is a view in perspective of the snap action bobby pin of FIGURE 1 in closed position gripping a lock of hair.

FIGURE 5 is an enlarged view in cross-section taken on line 5—5 of FIGURE 2.

FIGURE 6 is an enlarged view in cross-section taken on line 6—6 of FIGURE 2.

FIGURE 7 is an enlarged view in cross-section taken on line 7—7 of FIGURE 2.

FIGURE 8 is an enlarged view in cross-section taken on line 8—8 of FIGURE 2.

FIGURE 9 is an enlarged view in cross-section taken on line 9—9 of FIGURE 2.

FIGURE 10 is an enlarged view in cross-section taken on line **10—10** of FIGURE 4, line **10—10** and line **5—5** being through the same section of the snap action bobby pin shown in FIGURES 4 and 2, respectively.

FIGURE 11 is a view in perspective of another embodiment of the snap action bobby pin of this invention in open position.

FIGURE 12 is a front elevational view of the snap action bobby pin of FIGURE 11 shown in open position.

FIGURE 13 is a front elevational view of the snap action bobby pin of FIGURE 11 shown in closed position.

FIGURE 14 is a view in perspective of the snap action bobby pin of FIGURE 11 in closed position gripping a lock of hair.

FIGURE 15 is an enlarged view in cross-section taken on line **15—15** of FIGURE 12.

FIGURE 16 is an enlarged view in cross-section taken on line **16—16** of FIGURE 12.

FIGURE 17 is an enlarged view in cross-section taken on line **17—17** of FIGURE 12.

FIGURE 18 is an enlarged view in cross-section taken on line **18—18** of FIGURE 12.

FIGURE 19 is an enlarged view in cross-section taken on line **19—19** of FIGURE 12.

FIGURE 20 is an enlarged view in cross-section taken on line **20—20** of FIGURE 14, line **20—20** and line **15—15** being through the same section of the snap action bobby pin shown in FIGURES 14 and 12, respectively.

FIGURE 21 is a view in perspective of another embodiment of the snap action bobby pin of this invention in open position.

FIGURE 22 is a front elevational view of the snap action bobby pin of FIGURE 21 shown in open position.

FIGURE 23 is a front elevational view of the snap action bobby pin of FIGURE 21 shown in closed position.

FIGURE 24 is a view in perspective of the snap action bobby pin of FIGURE 21 in closed position gripping a lock of hair.

FIGURE 25 is an enlarged view in cross-section taken on line **25—25** of FIGURE 22.

FIGURE 26 is an enlarged view in cross-section taken on line **26—26** of FIGURE 22.

FIGURE 27 is an enlarged view in cross-section taken on line **27—27** of FIGURE 22.

FIGURE 28 is an enlarged view in cross-section taken on line **28—28** of FIGURE 22.

FIGURE 29 is an enlarged view in cross-section taken on line **29—29** of FIGURE 22.

FIGURE 30 is an enlarged view in cross-section taken on line **30—30** of FIGURE 24, line **30—30** and line **25—25** being through the same section of the snap action bobby pin shown in FIGURES 24 and 22, respectively.

FIGURE 31 is a view in perspective of another embodiment of the snap action bobby pin of this invention in open position.

FIGURE 32 is a front elevational view of the snap action bobby pin of FIGURE 31 shown in open position.

FIGURE 33 is a front elevational view of the snap action bobby pin of FIGURE 31 shown in closed position.

FIGURE 34 is a view in perspective of the snap action bobby pin of FIGURE 31 in closed position gripping a lock of hair.

FIGURE 35 is an enlarged view in cross-section taken on line **35—35** of FIGURE 32.

FIGURE 36 is an enlarged view in cross-section taken on line **36—36** of FIGURE 32.

FIGURE 37 is an enlarged view in cross-section taken on line **37—37** of FIGURE 32.

FIGURE 38 is an enlarged view in cross-section taken on line **38—38** of FIGURE 32.

FIGURE 39 is an enlarged view in cross-section taken on line **39—39** of FIGURE 32.

FIGURE 40 is an enlarged view in cross-section taken on line **40—40** of FIGURE 34, line **40—40** and line **35—35** being through the same section of the snap action bobby pin shown in FIGURES 34 and 32, respectively.

FIGURE 41 is a view in perspective of an embodiment of the snap action hair clip of this invention in open position.

FIGURE 42 is a front elevational view of the snap action hair clip of FIGURE 41 shown in open position.

FIGURE 43 is a front elevational view of the snap action hair clip of FIGURE 41 shown in closed position.

FIGURE 44 is a view in perspective of the snap action hair clip of FIGURE 41 in closed position gripping a lock of hair.

FIGURE 45 is an enlarged view in cross-section taken on line **45—45** of FIGURE 42.

FIGURE 46 is an enlarged view in cross-section taken on line **46—46** of FIGURE 42.

FIGURE 47 is an enlarged view in cross-section taken on line **47—47** of FIGURE 42.

FIGURE 48 is an enlarged view in cross-section taken on line **48—48** of FIGURE 42.

FIGURE 49 is an enlarged view in cross-section taken on line **49—49** of FIGURE 42.

FIGURE 50 is an enlarged view in cross-section taken on line **50—50** of FIGURE 44, line **50—50** and line **45—45** being through the same section of the snap action hair clip shown in FIGURES 44 and 42, respectively.

FIGURE 51 is a perspective view of an arm of another embodiment of the snap action hair clip of this invention.

FIGURE 52 is a top plan view of a cut metal blank for forming the snap action bobby pin of FIGURE 1 or the snap action bobby pin of FIGURE 11 or the snap action bobby pin of FIGURE 21 or the snap action bobby pin of FIGURE 31.

FIGURE 53 is a top plan view of a cut metal blank for forming the snap action hair clip of FIGURE 41.

FIGURE 54 is a bend diagram illustrating the formation of the snap action hair clip of FIGURE 41.

More specifically, there is provided snap action bobby pin **2** having arm **4**, snap action arm **6** and loop portion **8** connecting and normally urging said arms **4** and **6** towards each other, all formed from cut sheet metal blank **10**, clearly shown in FIGURE 52, and being of substantially uniform width, preferably a maximum width of about ¼ inch. Snap action arm includes two spaced-apart strip members **12** and **14** and has longitudinally extending slit or slot **16** between said spaced-apart strip members **12** and **14**. Slit or slot **16** is formed by stamping, lancing, piercing, or by a metal cutting saw. Spaced-apart strip members **18** and **20** are transversely positioned, as is clearly shown in the appended drawings, with respect to strip members **12** and **14** and connect said strip members **12** and **14**. To form snap action bobby pin **2**, cut sheet metal blank **10** is placed on an anvil member (not shown) and confined in a form (not shown), and arm **4**, portion **8**, strips **18** and **20** and segments, or portions **22** and **24** of strips **12** and **14**, respectively, are held in a locating nest to prevent movement. Longitudinal segments, or portions, **26** and **28** of strips **12** and **14**, respectively, said segments **26** and **28** being adjacent to segments **22** and **24**, respectively, are worked upon by swedging, by peening, or by cold rolling, or by any combination thereof, and segments **26** and **28** are thinned and placed under an expanding tension in relation to the adjacent segments **22** and **24**, respectively. Each of said segments, or portions **26** and **28** is so worked upon that the pattern of compression in one segment is similar to that of the other, said areas of compression **25** and **27** being in segments **26** and **28**, respectively. So worked upon arm **6** assumes a bowed, or buckled, condition. Loop **8** is formed by bending, surface **33** thereof being under compression and surface **35** thereof being under tension. Arm **4** is curved, as clearly shown in the ap-

pended drawings, in such a manner that its curvature is slightly less than the curvature of snap action arm **6** when snapped to closed position. The curvature of snap action arm **6** depends upon the width of each of the worked upon thinned segments **26** and **28** and upon the degree to which each of segments **26** and **28** is thinned, each being thinned at all or a portion of the space between connecting strips **18** and **20**. Because of the curvature of arm **4** being less than the curvature of snap action arm **6** there is created pressure tension on the hair lock, or tuft, held in place by snap action bobby pin **2** in closed position. Snap action arm **6** is of such overall longitudinal dimension with respect to arm **4** that snap action arm **6** slightly overlaps arm **4**, thereby allowing easy finger nail gripping thereof by the user for closing and opening bobby pin **2**. As a result of having been so worked upon, each of segments **26** and **28** is progressively thinner between connecting strip members **18** and **20** and adjacent segments **22** and **24**, the thinnest portion being at the beginning of the bowed portion thereof. FIGURES 1 to 10, inclusive, are proportional illustrations of snap action bobby pin **2**. As clearly shown in said appended drawings, so-worked upon thinned segment **26** varies gradually and progressively in its thinned compressed area **25** from zero to approximately one-third of the width of strip **12**, at the point shown in FIGURE 7, to approximately two-thirds of the width of strip **12**, at the point shown in FIGURE 5, and then to to approximately one-third of the width of strip **12**, at the point shown in FIGURE 8 and back to zero. The width of strip **12** extends from outer edge **30** to inner edge **38**. Compressed area **25** is at its maximum depth where segment **26** is approximately two-thirds of the width of strip **12**, as clearly shown in FIGURE 5, and the low point of the curvature of bowed arm **6** in its open position is at the section thereof clearly shown in FIGURE 5. Likewise, so-worked upon segment **28** varies gradually and progressively to match segment **26** of strip **12**, and compressed area **27** matches compressed area **25**. The width of strip **14** extends from outer edge **32** to inner edge **40**. As is clearly shown in the appended drawings segment **26** at edge **30** and segment **28** at edge **32** are each under an expanding tension in relation to segments **22** and **24**, respectively. In using snap action bobby pin **2**, bobby pin **2** is positioned, in its open position, in such a manner with respect to the hair lock, or tuft, that snap action arm **6** is above said hair lock and arm **4** is below said hair lock. Arm **6** is snapped into its reverse bowed condition, as clearly shown in the appended drawings, by application of a slight force at any point of the bowed portion. To release the lock of hair, arm **6** is merely snapped back to open position by application of a slight force in the opposite direction on finger grip portion **34**.

Snap action bobby pin **36** of FIGURES 11 to 20, inclusive, differs from snap action bobby pin **2** in that segments **22** and **24**, instead of segments **26** and **28**, of arm **6** are subjected to swedging, peening, cold rolling, or any combination thereof at all or a portion of the space between connecting strips **18** and **20**. Each of said segments, or portions, **22** and **24** is so worked upon that similar matching thinned compressed areas **5** and **7** are formed in segments **22** and **24**, respectively. The curvature of snap action arm **6** depends upon the width of each of the worked upon thinned segments **22** and **24** and upon the degree to which each of segments **22** and **24** is thinned at all or a portion of the space between connecting strips **18** and **20**. Because of having been so worked upon, each of segments **22** and **24** is made progressively thinner between connecting strips **18** and **20** and adjacent segments **26** and **28**, the thinnest portion being at the beginning of the bowed portion thereof. FIGURES 11 to 20, inclusive, are proportional illustrations of snap action bobby pin **36**. As clearly shown in said appended drawings, so-worked upon thinned segment **22** varies gradually and progressively in its thinned compressed area **5** from zero to approximately one-third of the width of strip **12**, at the point shown in FIGURE 17, to approximately two-thirds of the width of strip **12**, at the point shown in FIGURE 15, and then to approximately one-third of the width of strip **12**, at the point shown in FIGURE 18 and back to zero. The width of strip **12** extends from outer edge **30** to inner edge **38**. Compressed area **5** is at its maximum depth where segment **22** is approximately two-thirds of the width of strip **12**, as clearly shown in FIGURE 15, and the low point of the curvature of bowed arm **6** in its open position is at the section thereof clearly shown in FIGURE 15. Likewise, so-worked upon thinned segment **24** varies gradually and progressively to match segment **22** of strip **12**, and compressed area **7** matches compressed area **5**. The width of strip **14** extends from outer edge **32** to inner edge **40**. As is clearly shown in the appended drawings segment **22** at edge **38** and segment **24** at edge **40** are each under an expanding tension in relation to segments **26** and **28**, respectively. In using snap action bobby pin **36**, bobby pin **36** is positioned, in its open position, in such a manner with respect to the hair lock, or tuft, that snap action arm **6** is above said hair lock and arm **4** is below said hair lock. Arm **6** is snapped into its reverse bowed condition, as clearly shown in the appended drawings, by application of a slight force at any point of the bowed portion. To release the lock of hair, arm **6** is snapped back to open position by application of a slight force in the opposite direction on finger grip portion **34**.

Snap action bobby pin **42** of FIGURES 21 to 30, inclusive, differs from snap action bobby pin **2** in that strip member **12**, including segments **22** and **26**, and strip member **14**, including segments **24** and **28**, are subjected to swedging, peening, or cold rolling, or any combination thereof at all or a portion of the space between connecting strips **18** and **20**. Each of said strips **12** and **14** is so worked upon that similar matching thinned compressed areas **15** and **17** are formed in strips **12** and **14**, respectively. The curvature of snap action arm **6** depends upon the width of each of the worked upon thinned strips **12** and **14** and upon the degree to which each of strips **12** and **14** is thinned at all or a portion of the space between connecting strips **18** and **20**. Because of having been so worked upon, each of strips **12** and **14** is made progressively thinner between strips **18** and **20**, the thinnest portion being at the beginning of the bowed portion thereof. FIGURES 21 to 30, inclusive, are proportional illustrations of snap action bobby pin **42**. As clearly shown in said appended drawings, so-worked upon thinned strip **12** varies gradually and progressively in its thinned compressed area **15** from zero to approximately two-thirds of the width of strip **12**, at the point shown in FIGURE 27, to the full width of strip **12**, at the point shown in FIGURE 25, and then to approximately two-thirds of the width of strip **12**, at the point shown in FIGURE 28 and back to zero. The width of strip **12** extends from outer edge **30** to inner edge **38**. Compressed area **15** is at its maximum depth at the section clearly shown in FIGURE 25. Thinned strip **14** varies gradually and progressively to match strip **12**, and compressed area **17** matches compressed area **15**. The width of strip **14** extends from outer edge **32** to inner edge **40**. As is clearly shown in the appended drawings segment **26** at edge **30** and segment **28** at edge **32** are each under an expanding tension in relation to segments **22** and **24**, respectively. In using snap action bobby pin **42**, bobby pin **42** is positioned, in its open position, in such a manner with respect to the hair lock, or tuft, that snap action arm **6** is above said hair lock and arm **4** is below said hair lock. Arm **6** is snapped into its reverse bowed condition, as clearly shown in the appended drawings, by application of a slight force at any point of the bowed portion. To release the lock of hair, arm **6** is snapped back to open position by application of a slight force in the opposite direction on finger grip portion **34**.

Snap action bobby pin 44 of FIGURES 31 to 40, inclusive, differs from snap action bobby pin 2 in that strip member 12, including segments 22 and 26, and strip member 14, including segments 24 and 28, are subjected to swedging, peening, or cold rolling, or any combination thereof at all or a portion of the space between connecting strips 18 and 20. Each of said strips 12 and 14 is so worked upon that similar matching thinned compressed areas 45 and 47 are formed in strips 12 and 14, respectively. The curvature of snap action arm 6 depends upon the width of each of the worked upon thinned strips 12 and 14 and upon the degree to which each of strips 12 and 14 is thinned at all or a portion of the space between connecting strips 18 and 20. Because of having been so worked upon, each of strips 12 and 14 is made progressively thinner between strips 18 and 20, the thinnest portion being at the beginning of the bowed portion thereof. FIGURES 31 to 40, inclusive, are proportional illustrations of snap action bobby pin 44. As clearly shown in said appended drawings, so-worked upon thinned strip 12 varies gradually and progressively in its thinned compressed area 45 from zero to approximately two-thirds of the width of strip 12, at the point shown in FIGURE 37, to the full width of strip 12, at the point shown in FIGURE 35, and then to approximately two-thirds of the width of strip 12, at the point shown in FIGURE 38 and back to zero. The width of strip 12 extends from outer edge 30 to inner edge 38. Compressed area 45 is at its maximum depth at the section thereof clearly shown in FIGURE 35. Thinned strip 14 varies gradually and progressively to match strip 12, and compressed area 47 matches compressed area 45. The width of strip 14 extends from outer edge 32 to inner edge 40. As is clearly shown in the appended drawings segment 22 at edge 38 and segment 24 at edge 40 are each under an expanding tension in relation to segments 26 and 28, respectively. In using snap action bobby pin 44, bobby pin 44 is positioned, in its open position, in such a manner with respect to the hair lock, or tuft, that snap action arm 6 is above said hair lock and arm 4 is below said hair lock. Arm 6 is snapped into its reverse bowed condition, as clearly shown in the appended drawings, by application of a slight force at any point of the bowed portion. To release the lock of hair, arm 6 is snapped back to open position by application of a slight force in the opposite direction on finger grip portion 34.

Also within the scope of this invention is snap action hair clip 46 having arm 48 and snap action arm 50 formed from cut sheet metal blank 52, clearly shown in FIGURE 53. Snap action arm 50 includes two spaced-apart strip members 54 and 56 and has longitudinally extended slot 58 between said spaced-apart strip members 54 and 56. Slot 58 is formed preferably by stamping. Spaced-apart strip members 60 and 62 are transversely positioned, as clearly shown in the appended drawings, with respect to strip members 54 and 56 and connect strip members 54 and 56. To form snap action hair clip 46, cut sheet metal blank 52 is placed on an anvil member (not shown) and confined in a form (not shown). Portion 78, including arm 48 and portion 88, strips 60 and 62, and segments, or portions 68 and 70 of strips 54 and 56, respectively, of arm 50 are held in a locating nest to prevent movement. Segments, or portions, 64 and 66 of strips 54 and 56, respectively, said segments 64 and 66 being adjacent to segments 68 and 70, respectively, are worked upon by swedging, by peening, or by cold rolling, or by any combination thereof, and segments, or portions, 64 and 66 are thinned and placed under an expanding tension in relation to the adjacent segments 68 and 70, respectively. Each of said segments 64 and 66 is so worked upon that the pattern of compression in one segment is similar to that of the other, said areas of compression 55 and 57 being in segments 64 and 66, respectively. So-worked upon arm 50 assumes a bowed, or buckled, condition. Blank 52 is bent to form bend 76, and portion 78, including arm 48, coincides with line 76, 80. Bend 82 is formed, and arm 48 is formed to coincide with line 82, 84. Portion 78 is bent over snap action arm 50 at bend 86, and portion 88 is squeezed against connecting strip 60. The curvature of snap action arm 50 depends upon the width of each of the worked upon thinned segments 64 and 66 and upon the degree to which each of said segments 64 and 66 is thinned, each being thinned at all or a portion of the space between connecting strips 60 and 62. As a result of having been so worked upon, each of segments 64 and 66 of arm 50 is progressively thinner between connecting strips 60 and 62 and adjacent segments 68 and 70, the thinnest portion being at the beginning of the bowed portion thereof. FIGURES 41 and 50, inclusive, are proportional illustrations of snap action hair clip 46. As clearly shown in said appended drawings, so-worked upon thinned segment 64 varies gradually and progressively in its thinned compressed area 55 from zero to approximately one-third of the width of strip 54, at the point shown in FIGURE 47, to approximately two-thirds of the width of strip 54, at the point shown in FIGURE 45, and then to approximately one-third of the width of strip 54, at the point shown in FIGURE 48 and back to zero. The width of strip 54 extends from inner edge 72 to outer edge 73. Compressed area 55 is at its maximum depth where segment 64 is approximately two-thirds of the width of strip 54, as clearly shown in FIGURE 45, and the low point of curvature of bowed arm 50, in its open position, is at the section thereof clearly shown in FIGURE 45. Likewise, so-worked upon segment 66 varies gradually and progressively to match segment 64 of strip 54, and compressed area 57 matches compressed area 55. The width of strip 56 extends from inner edge 74 to outer edge 75. As is clearly shown in the appended drawings segment 66 at edge 74 and segment 64 at edge 72 are each under an expanding tension in relation to segments 70 and 68, respectively. In using snap action hair clip 46, hair clip 46 is positioned, in its open position, in such a manner with respect to the hair lock, or tuft, that snap action arm 50 is above said hair lock and arm 48 is below said hair lock. Arm 50 is snapped into its reverse bowed condition, as clearly shown in the appended drawings, by application of a slight force at any point of the bowed portion. To release the lock of hair, arm 50 is snapped back to open position by application of a slight force in the opposite direction on finger grip portion 90.

Also within the scope of this invention are snap action hair clips made from blank 52, wherein a compressed area is formed in each of strips 54 and 56 similar to those formed in strips 12 and 14 of snap action bobby pin 2, wherein compressed areas are formed in strips 54 and 56 similar to those formed in strips 12 and 14 of snap action bobby pin 42, and wherein compressed areas are formed in strips 54 and 56 similar to those formed in strips 12 and 14 of snap action bobby pin 44. In snap action hair clip 46 compressed areas 55 and 57 in strips 54 and 56, respectively, are similar to compressed areas 5 and 7 in strips 12 and 14, respectively, of snap action bobby pin 36.

Referring to FIGURE 51 of the appended drawings, arm 92 is used in place of arm 48 in each of the hereinbefore described snap action hair clips. Arm 92 has two spaced-apart members, or strips, 94 and 96 between connecting member, or strip, 98 and has bends 76, 80 and 82, as in arm 48. Also, arm 92 has a configuration similar to the configuration of arm 48.

In each of the hereinbefore described embodiments the thinned strips are preferably positioned in directly opposing relationship to each other and are preferably similar in cross-section. Thusly, the exposed edge and adjacent thinned portion of one side is similar to the exposed edge and adjacent thinned portion of the other side in contour and length.

Each of the embodiments of this invention is preferably

made of metal, as hereinbefore set forth. However, synthetic plastic materials, including thermoplastic organic material, can be used therefor. Also contemplated to be within the scope of this invention are snap action hair holding means made by a molding process.

Many alterations and changes may be made without departing from the spirit and scope of this invention which is set forth in the appended claims which are to be construed as broadly as possible in view of the prior art.

I claim:

1. A snap action bobby pin comprising a pair of opposing arms and a loop connection normally urging said arms towards each other, one of said arms comprising two first spaced-apart strips and two second spaced-apart strips transversely positioned with respect to said first spaced-apart strips, said second spaced-apart strips connecting said first spaced-apart strips, a longitudinal segment at one edge of each of said two first spaced-apart strips being under an expanding tension in relation to the adjacent segment of the same strip, said longitudinal segment being thinner than said adjacent segment, said two first spaced-apart strips having substantially smooth surfaces, whereby said one arm assumes a bowed condition and can be snapped to a reverse bowed condition.

2. The snap action bobby pin of claim 1 wherein said arms and said loop connection are of substantially uniform width.

3. The snap action bobby pin of claim 1 wherein each of said arms and said loop connection has a maximum width of about ¼ inch.

4. A snap action hair clip comprising two arms connected at one of their end portions, one of said arms comprising two first spaced-apart strips and two second spaced-apart strips transversely positioned with respect to said first spaced-apart strips, said second spaced-apart strips connecting said first spaced-apart strips, a longitudinal segment at one edge of each of said two first spaced-apart strips being under an expanding tension in relation to the adjacent segment of the same strip, said longitudinal segment being thinner than said adjacent segment, said two first spaced-apart strips having substantially smooth surfaces, whereby said one arm assumes a bowed condition and can be snapped to a reverse bowed condition.

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