

[54] BRACELET CONNECTOR

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[51] Int. Cl. **A44c 5/18, A43c 11/08**

[58] Field of Search **24/240, 241 S, 241 WB, 241 P, 24/265 B, 73 J, 73 WW, 241 R, 232, 265 H, 265 SH, 265 WS**

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[57] ABSTRACT

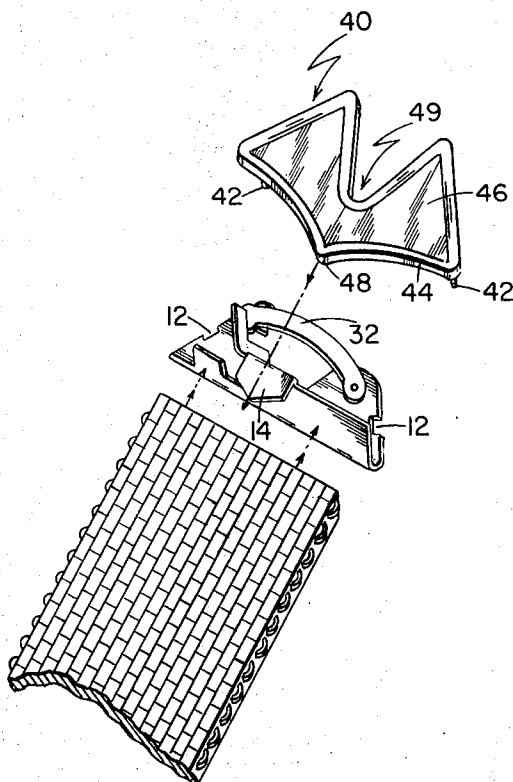
A connector, for coupling the end of a bracelet to another member, comprising a base member and a latching arm mounted thereupon, the base member being formed from stamped sheet metal and including a floor having an end portion which is upwardly bent from the remainder of said floor, the latching arm being pivotally mounted upon a wall portion of the base member and having retaining means, which, in an operative position of the arm, is resiliently engaged with the end portion of the floor.

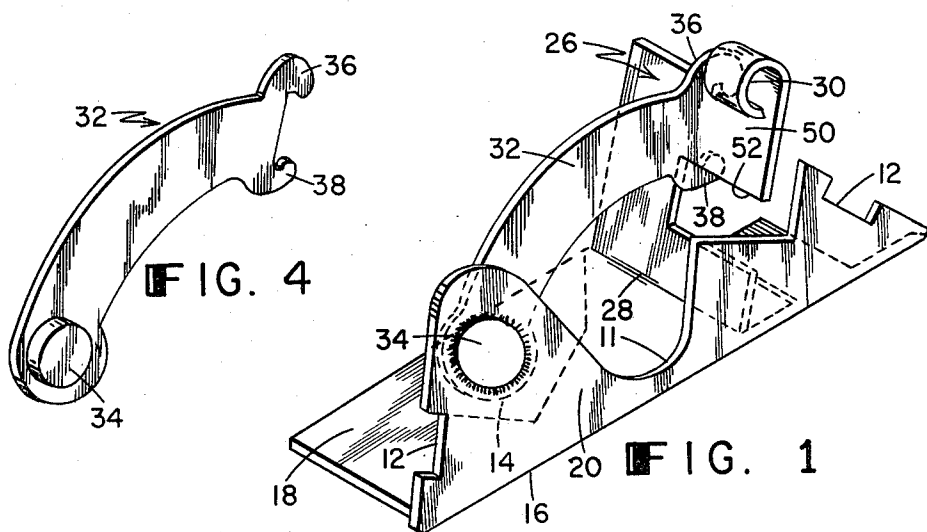
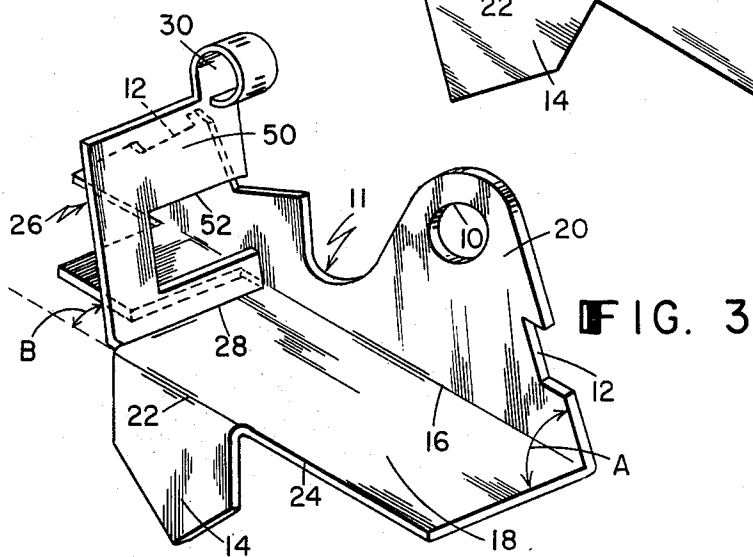
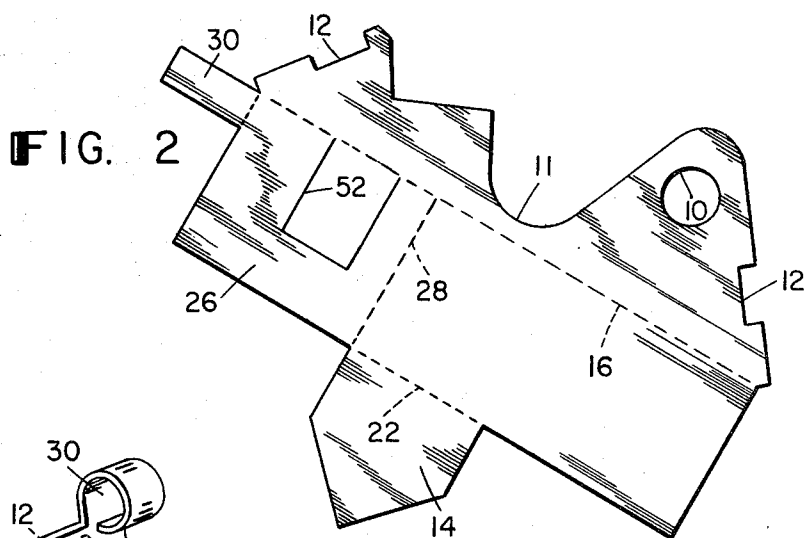
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9 Claims, 7 Drawing Figures





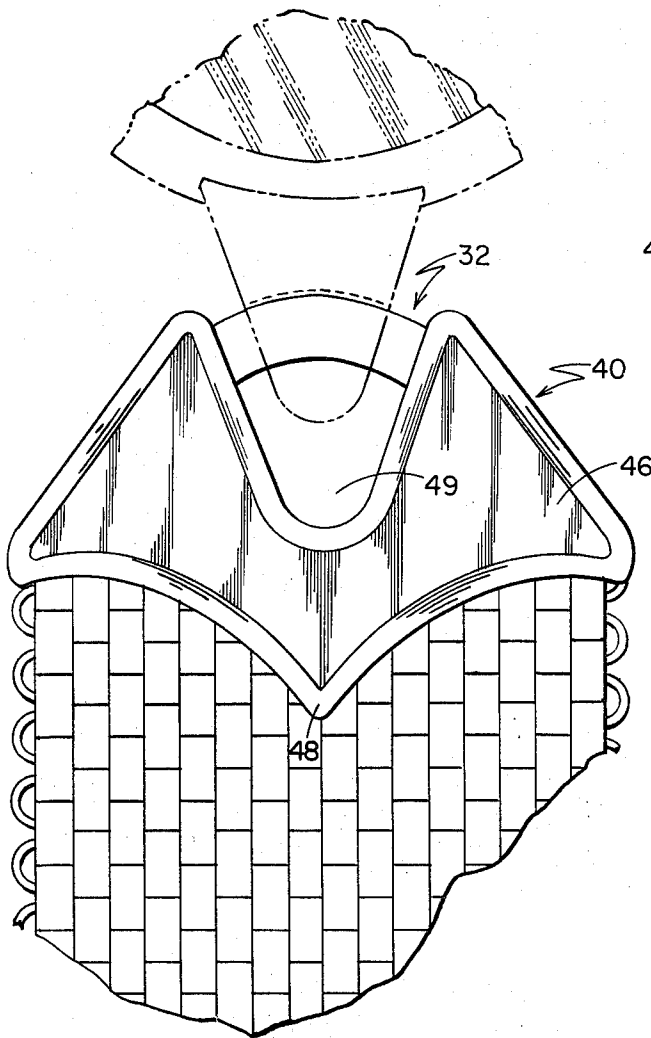


FIG. 5

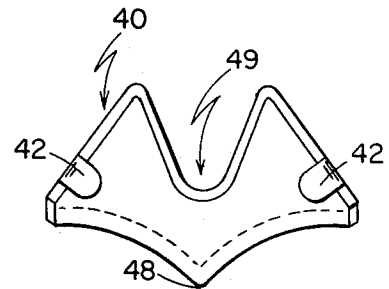


FIG. 7

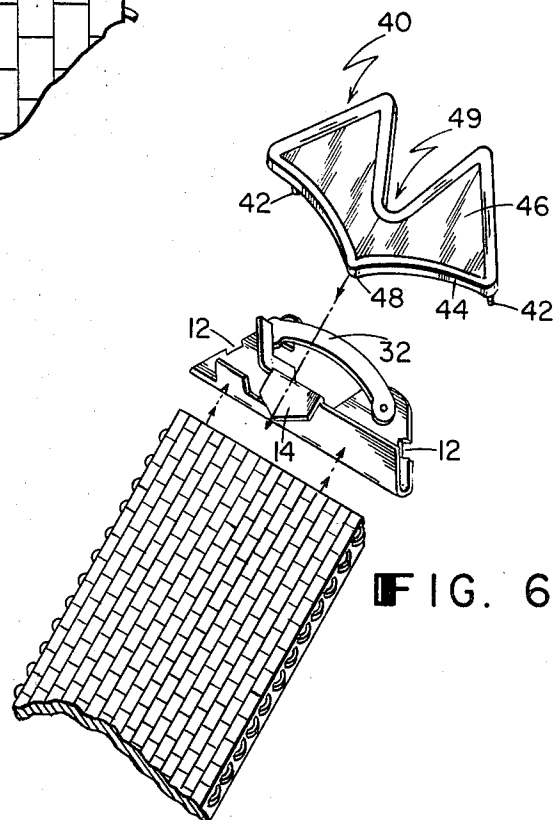


FIG. 6

BRACELET CONNECTOR

This invention relates to an improved connector of the type suitable for coupling the end of a bracelet to another member (e.g., the other end of the bracelet or a wristwatch or like object to be fastened to the bracelet).

Bracelets have conventionally been coupled together, or wristwatches coupled to the ends of bracelets, by clasps which are exposed to view and of a design which has not harmonized with that of the bracelet. Other connectors, while being functionally effective and being substantially hidden from view when worn with a cover presenting a design harmonizing with that of the bracelet, have had various drawbacks. Specifically, the number and nature of the parts and of the assembly steps involved were such that automatic machine production and assembly was not feasible and the cost of assembly by hand operations was such that the connector was commercially unacceptable. Furthermore, in these latter connectors, in order that a separately formed spring could function properly, the device had to be of a size too large to be used on narrow bracelets often worn by women.

In view of the foregoing, it is a principal object of this invention to provide a connector having the advantages of the aforementioned concealable connector but which has fewer and simpler parts and requires fewer and simpler assembly operations so that it is readily susceptible to fully automatic machine production and assembly and which may be of substantially smaller size.

To achieve these objects the invention contemplates a connector comprising a base member and a latching arm pivotally mounted upon the base member. The base member may be formed from stamped sheet metal and includes a floor portion and a wall portion. The floor portion has an end thereof upwardly bent from the remainder preferably at an angle less than 90°. The latching arm is pivotally mounted upon the wall portion and has retaining means at the end of the arm removed from the point of pivoting. The length of the latching arm and the location of the upwardly bent end portion of the floor are chosen such that the retaining means on the arm may be resiliently engaged with that end portion of the floor. In preferred embodiments the retaining means comprises a pair of spaced-apart jaw-like projections extending from the free end of the closing arm; the bent upward floor portion has extending therefrom a cantilevered strip which may be used to flex that end portion thereby facilitating disengagement of the retaining means; and the wall and floor portions of the base member intersect in an angle of less than 90°. Furthermore, the connector may be provided with a leg portion extending from the base floor in the direction opposite the wall portion and with a plurality of notches on the periphery of the wall portion, the leg and the notches constructed and arranged to engage a point and a plurality of clips, respectively, of a decorative cover suitable for concealing the connector.

The foregoing and other objects and advantages of the invention will more fully appear from the description of a preferred embodiment thereof, in conjunction with the appended drawing, wherein:

FIG. 1 is a perspective view showing the assembled connector according to the invention comprising a base member and pivotally mounted latching arm;

FIG. 2 is a plan view of the base member of the connector prior to being folded into its final configuration;

FIG. 3 is a perspective view showing the base member after it has assumed its final configuration;

FIG. 4 is a perspective view of the latching arm of the connector;

FIG. 5 is an enlarged plan view of the connector assembled with an ornamental cover as used to connect the end links of a bracelet and watch;

FIG. 6 is an exploded view of the finished assembly shown in FIG. 5; and

FIG. 7 is a plan view of the reverse side of an ornamental cover.

Referring to the drawings, the connector of FIG. 1 comprises a base member shown in FIG. 3 and a pivotally mounted latching arm shown in FIG. 4. The base member is stamped out of resilient material such as sheet metal, preferably stainless steel, in the form shown in FIG. 2, with opening 10, large notch 11, small notches 12 and leg 14. The base member is mechanically folded along axis 16 to form a floor 18 and wall 20 (as shown in FIG. 3) which meet at axis 16 in an angle, A, preferably less than 90°, desirably about 80°. The base member is also folded along axis 22 such that leg 14 extends perpendicularly downward from the edge 24 of the floor 18 parallel to axis 16. The end portion 26 of the floor is upwardly bent along axis 28 at an angle, B, preferably less than 90°, desirably about 68°. Cantilevered strip 30 is bent and curled inward to form a round finger piece projecting from end portion 26.

The latching arm 32 is pivotally mounted to the base member by insertion of an extruded projection 34 formed adjacent one end of the arm through opening 10 in the wall 20 of the base member and subsequent enlargement of the end thereof as by spinning or peening. At the free end of the arm, a pair of jaw-like projections 36 and 38 extending from the tip of, and in the same plane as, the arm serve a latching function when the arm is in its closed, operative position, as described below.

The assembled connector may have secured to it an ornamental cover 40 (FIGS. 5 through 7) designed for harmonious appearance with a bracelet or wristwatch. The cover 40 is formed with clips 42 projecting laterally from walls 44 integral with and perpendicular to the face 46 of said cover. The clips are so formed and spaced as to be aligned with the similarly spaced notches 12 along the wall 20 of the connector's base portion when the cover 40 is placed thereover so that the clips may be folded to the positions shown in FIG. 7 to lock them in the notches. Leg 14, extending from the floor of the base member of the assembled connector, fits within the v-shaped lower point 48 of the cover as shown in the exploded view of FIG. 6.

The connector is readily attached to the end link of a bracelet by welding or soldering the underside of floor 18 thereto, with the leg 14 and cover portion thereover overlying the bracelet end, as indicated in FIGS. 5 and 6. The cover is provided with a notch 49 that overlies notch 11 in wall 20, thus forming an opening into which a fastening member of the other part may be inserted and clamped by inserting the latching arm therethrough and fastening it, as shown in FIG. 5. The cover thus conceals all the operating parts of the connector except a portion of arm 32 beyond projection 34.

In operation the jaw-like projections 36 and 38 are releasably held by that part 50 of the end portion 26 of floor 18 which defines the outer side of a recess 52 formed in the raised end 26 during the initial stamping as shown in FIG. 2. By choosing the width of part 50 to be slightly greater than the distance between projections 36 and 38, the projections snap therearound to effect a secure retention of the latching arm. Once in operative, latched position, the arm 32 may be released and pivoted to an inoperative position by depression of the resilient raised end 26 of the floor, which may be readily done by the application of a finger or suitable instrument to the round piece 30.

It should be noted that to the extent that angle A is less than 90°, the round finger piece 30 will be disposed beyond the plane of the wall 20, such orientation facilitating its operation.

Engagement of leg 14 with point 48 of the cover 40 and of clips 42 with notches 12 firmly retains the ornamental cover over the connector while permitting access to the arm 32 for operation of the connector.

It will be observed that the connector (excluding the cover) is made of only two parts, the base member which may be formed in a single metal stamping and bending operation, and the arm which may be formed in a single metal stamping and extrusion operation. These operations are readily performed by automatic machines. Further, assembly is a simple matter

of inserting projection 34 through opening 10 and spinning or peening its end, an operation which is also adapted to automatic machine assembly.

What is claimed is:

1. A connector, for coupling the end of a bracelet to another member, comprising a base member and a latching arm mounted thereupon, said member including a floor and a wall, said floor having an end portion which is upwardly bent from the remainder of said floor, said latching arm being pivotally mounted upon said wall at one end of said arm and having retaining means at the other end thereof, the length of said arm and the location of said end portion of said floor being such that said retaining means, in an operative position, is resiliently engaged with said end portion.

2. The connector as claimed in claim 1 wherein said latching arm has a projection at the end opposite said retaining means and said wall has an opening therein through which said projection extends and is retained by an enlarged end thereof.

3. The connector as claimed in claim 1 wherein said end portion of said floor is bent up from said remainder of said floor at an angle of less than 90°.

4. The connector as claimed in claim 1 wherein said end

portion of said floor is bent up from said remainder of said floor at an angle of approximately 68°.

5. The connector as claimed in claim 1 wherein said wall and said floor of said base member intersect in an angle of less than 90°.

6. The connector as claimed in claim 1 wherein said retaining means comprises a pair of spaced-apart jaw-like projections extending from the free end of said arm.

7. The connector as claimed in claim 1 wherein said end portion of said floor has a cantilevered strip extending therefrom, whereby said end portion may be readily flexed so as to disengage said retaining means therefrom.

8. The connector as claimed in claim 1 wherein said base member is formed from stamped sheet metal.

9. The connector as claimed in claim 1 wherein said base member includes a leg extending perpendicularly from said floor in a direction which is opposite the direction in which said wall extends from said floor, and wherein said wall has a plurality of notches on its periphery, and which includes an ornamental cover mounted thereupon, said cover having a plurality of clips laterally projecting therefrom and engaged with said notches and also having means engageable with said leg.

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