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METHOD OF MAKING TELESCOPIC BRACELET INNER BOX ELEMENTS

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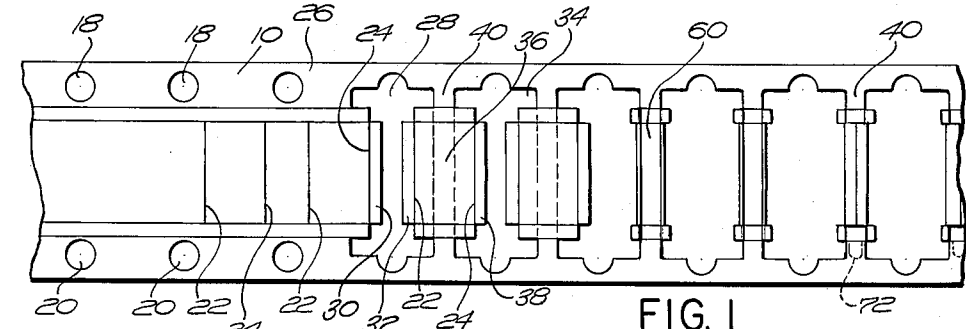


FIG. 1

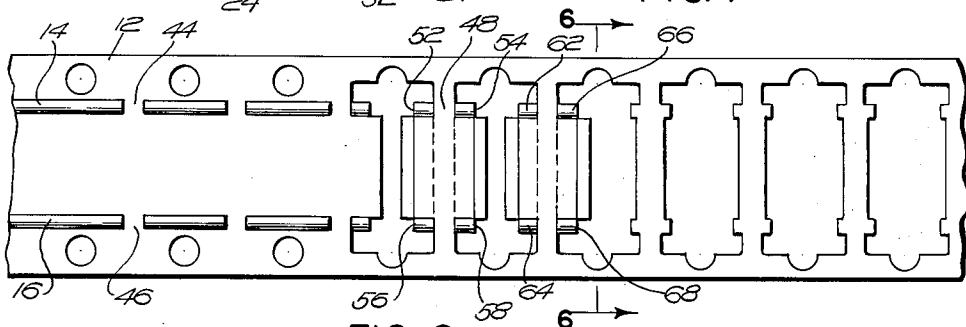


FIG. 2

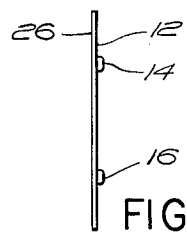


FIG. 3

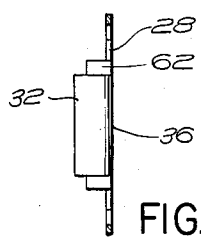


FIG. 6

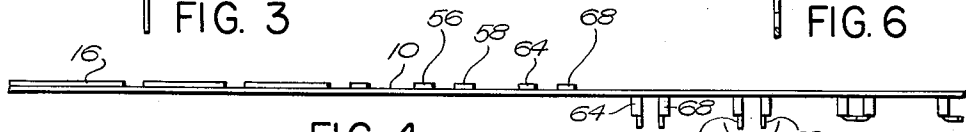


FIG. 4

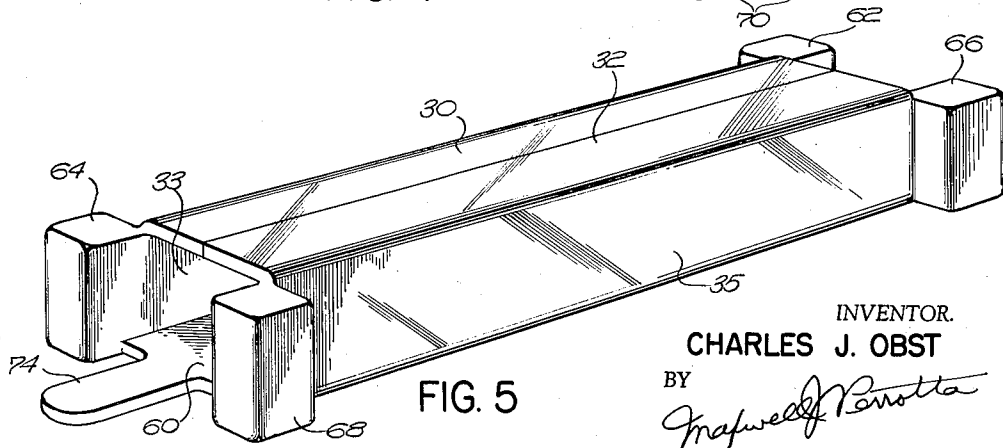


FIG. 5

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METHOD OF MAKING TELESCOPIC BRACELET INNER BOX ELEMENTS

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4 Claims. (Cl. 29—160.6)

The present invention relates to improvements in telescopic bracelets and more particularly to an improved method of making inner telescopic box elements for telescopic chain bracelets.

Heretofore, telescopic chain bracelets have involved a design wherein the outer telescopic box elements are provided with inturned shoulders at their ends while the inner telescopic box elements have been provided with outturned shoulders acting as end stops for retaining the inner telescopic elements in the desired telescoping relationship with the outer telescopic elements. An objection encountered in prior designs of the inner telescopic boxes and the methods by which such inner boxes were made has been that when the bracelet formed with such components is held in tension, the outturned shoulders sometimes bend and fracture under the strain and frequently the shoulders bend and become dislodged from the inturned shoulders of the outer telescopic elements, which in effect is a fracture of the bracelet.

Accordingly, it is an object of the present invention to provide an improved telescopic bracelet inner box element which is of such design and is made in such fashion as to overcome objections encountered heretofore.

Another object of the present invention is to provide a simple method of overcoming the objections heretofore present in designs involving outturned shoulders on the inner telescopic box elements.

A further object of the present invention is to provide an improved method of making inner telescopic box elements for telescopic chain wherein a special stock is utilized, the stock being stamped, formed and otherwise altered so that individual inner telescopic box elements are ultimately formed with rigid, integral outwardly extending shoulders, the latter being provided without the necessity of bending material outwardly of the body of the box.

Various other objects and advantages will become apparent from the detailed description to follow.

In the drawings:

Figure 1 is a top plan view showing a strip of stock which has been passed through several stations, illustrating the various stages of punching, cutting and forming the strip into the inner box elements;

Figure 2 is a bottom plan view similar to Figure 1;

Figure 3 is an end elevational view showing the cross section of the stock employed in connection with the present method;

Figure 4 is a side elevational view of the strip of stock shown in Figure 2;

Figure 5 is an enlarged perspective view showing an individual inner telescopic box element upon completion of the forming method of the present invention;

Figure 6 is a transverse sectional view taken substantially along the plane of line 6—6 in Figure 2.

Referring more particularly to the drawings, wherein like numerals apply to like parts throughout, and having reference first to Figures 1 through 3, it will be seen that my improved method of making inner telescopic

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box elements for telescopic chain employs a thin strip of metallic stock 10 which has a thickness selected according to the thickness of the walls of the inner telescopic box element. Figure 3 shows the stock in end elevation and illustrates on one surface 12 thereof, a pair of raised ribs 14 and 16 which run longitudinally of the strip in transversely spaced parallel relation. The ribs are of substantially rectangular cross-section corresponding to the desired end form of shoulders on the inner telescopic box to be formed from the strip of stock. Also, the space between the raised ribs 14 and 16 is selected according to the desired length of the inner telescopic box element between the end shoulders thereof.

With continued reference to Figures 1 through 4, my improved method of making inner telescopic box elements from the strips of stock, as above described, will now be set forth. The strip of stock 10 is fed through a series of stations and the first step to be performed on the stock is to punch a series of holes therein for the purpose of guiding and feeding the stock forwardly through the series of operations. Preferably, the openings are punched in the sides of the strip 10, as at 18 and 20. Next, the strip of stock 10 is transversely scored as at 22 and 24, the score lines 22 and 24 being formed on the surface 26 of the strip 10, which is opposite from the surface 12 having the ribs 14 and 16 thereon. The score lines 22 and 24 extend in parallel relation transversely of the strip of stock and terminate at the locus of the ribs 14 and 16. The spacing between the pairs of transverse score lines 22 and 24 is sufficient to outline stock for the top and side walls of the inner box element to be formed. Also, the spacing between one pair of score lines 22 and 24 and the next adjacent pair of score lines is such as to provide sufficient stock for the bottom flaps of the telescopic box element and material to be cut-away therebetween.

Preferably at this point in the sequence of operations, the longitudinally extending raised ribs 14 and 16 are cut away, ground or otherwise worked so as to remove portions at 44 and 46. The portions 44 and 46 are transversely aligned and it is to be noted that the lengths of the cutaway portions correspond with the width of the top wall of the inner telescopic box element to be formed, as will be seen more clearly hereinafter. Moreover, the cutaway portions 44 and 46 are located at the narrow joiinder portions 40 as shown best in Figure 2.

The next operation is to punch or cut out transverse strips of stock forming openings, as at 28. The punched out portion 28 removes the excess material between the pairs of score lines 22 and 24, leaving the material necessary for the flaps as at 30 and 32, outwardly of the score lines. In cutting out the portions 28, it will be seen that when two successive punching operations have occurred, a generally rectangular blank is formed as at 48 from which a single inner telescopic box element ultimately is formed. Looking at one of the blanks 48, it will be seen that it has its pair of score lines at 22 and 24 with the flaps 30 and 32 outwardly thereof. Further, in punching out the portions 28, it will be seen that the blank 48 formed thereby is joined to the remainder of the strip by means of the narrow joiinder portions at 40. Also, in punching out the portions 28, corner portions of the blanks 48 are removed as at 52, 54, 56 and 58. The corner cutaway portions described are coextensive in width on the strip with the width of the ribs 14 and 16, and correspond in length with the width of the flaps of the box element to be formed.

The next operation is accomplished by pressing a tool downwardly on the inside of the top wall 60 of the box element to be formed. A pair of blades are then moved

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upwardly on either side of the tool holding the top wall 60 down so as to bend the side walls including the rib portions 62, 64, 66 and 68 as well as the flaps integral with the side walls to a position at right angles to the top wall 60. Figure 4 shows the side walls, bottom flaps and rib portions when so bent. Next, a pair of arbors are engaged within each of the telescopic box elements being formed and a V-shaped rolling tool engages the flaps, as at 30 and 32, to bend them over in the direction of the arrows 70 to the position shown at the right-hand end of Figure 4 wherein the flaps are aligned and in parallel relation to the top wall.

Finally, the individual telescopic box element so formed is severed from the strip by cutting the narrow joiner portion 40 closely adjacent the end of the inner telescopic box element at one end and by severing the other narrow joiner portion 40 along the outline shown at 72 so as to provide a tab extending from the top wall 60 of the box element.

An individual inner telescopic box element formed in accordance with the foregoing method is shown in greatly enlarged perspective view in Figure 5. The top wall is shown at 60, the side walls are at 33 and 35 and the bottom flaps are shown at 30 and 32. The tab 74 formed on the top wall 60 is a spring retainer, the tab being bent over to hold one end of a spring as will be understood by one skilled in the art. The rib portions 64, 68 and 62, 66 have been bent with the side walls 33 and 35 but not relative to the side walls and project outwardly in the end product so as to provide the desired outwardly extending shoulders. It will be noted that the rib formations obviate the necessity for outwardly bending any of the stock at the ends of the side walls for such purpose, thereby resulting in greater strength avoiding undesirable bending or fracture of the end shoulders as was previously encountered with constructions produced by outwardly bending such shoulders.

From the foregoing, it is believed that I have provided an improved design for an inner telescopic box element for telescopic chain and an improved method of making the same which fulfills the objects hereinbefore enumerated.

As this invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, since the scope of the invention is defined by the appended claims rather than by the description preceding them, and all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly cooperative equivalents, are therefore intended to be embraced by these claims.

I claim:

1. A method of making a telescopic bracelet inner box element comprising the steps of feeding a thin, flat strip of metallic stock having a pair of longitudinally extending, parallel ribs of rectangular cross-section projecting from one surface thereof through a series of stations, punching a series of holes in the strip for guiding and step feeding the stock through the series of stations, periodically completely removing longitudinal portions of the ribs corresponding in length to the desired width of the top wall of the box element at transversely aligned locations on the strip, transversely scoring the stock from rib to rib at locations spaced sufficiently to provide stock therebetween for the top and side walls of the inner box element, punching out transverse sections of stock so as to leave generally rectangular blanks wider than said score lines by the desired width of the flaps for the bottom of the box element and joined to the sides of the stock by narrow joiner portions aligned with the rib cutaway portions and so as to remove corner sections of the blanks which are transversely coincidental with the ribs and longitudinally equivalent to the width of the flaps, folding transverse portions of the blank in-

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cluding the bottom flaps and side walls with the remaining rib portions while holding the top section so that the flaps and side walls are at right angles to the top section, then folding the flaps over parallel to the top section and finally severing the completed box element from the strip of stock.

2. A method of making a telescopic bracelet inner box element comprising the steps of feeding a thin, flat strip of metallic stock having a pair of longitudinally extending, parallel ribs of rectangular cross-section projecting from one surface thereof through a series of stations, punching a series of holes in the strip for guiding and step feeding the stock through the series of stations, periodically completely removing longitudinal portions of the ribs, corresponding in length to the desired width of the top wall of the box element at transversely aligned locations on the strip, transversely scoring the stock from rib to rib at locations spaced sufficiently to provide stock therebetween for the top and side walls of the inner box element, punching out transverse sections of stock so as to leave generally rectangular blanks wider than said score lines by the desired width of the flaps for the bottom of the box element and joined to the sides of the stock by narrow joiner portions aligned with the rib cutaway portions and so as to remove corner sections of the blanks which are transversely coincidental with the ribs and longitudinally equivalent to the width of the flaps, folding transverse portions of the blank including the bottom flaps and side walls while holding the top section so that the flaps and side walls are at right angles to the top section, inserting arbors into opposite ends of the blank so formed, then rolling the flaps over the arbors so as to be parallel to the top section and finally severing the completed box element from the strip of stock.

3. A method of making a telescopic bracelet inner box element comprising the steps of feeding a thin, flat strip of metallic stock having a pair of longitudinally extending, parallel ribs of rectangular cross-section projecting from one surface thereof through a series of stations, punching a series of holes in the strip for guiding and step feeding the stock through the series of stations, periodically completely removing longitudinal portions of the ribs corresponding in length to the desired width of the top wall of the box element at transversely aligned locations on the strip, transversely scoring the stock from rib to rib at locations spaced sufficiently to provide stock therebetween for the top and side walls of the inner box element, punching out transverse sections of stock including rib portions so as to leave generally rectangular blanks wider than said score lines by the desired width of the flaps for the bottom of the box element and joined to the sides of the stock by narrow joiner portions and so as to remove corner sections of the blanks transversely coincidental with the ribs so as to leave a pair of rib portions at each end of the blank corresponding in length to the desired width of the side walls of the box element, folding transverse portions of the blank including the bottom flaps and side walls with the rib portions thereon while holding the top section so that the flaps and side walls are at right angles to the top section, then folding the flaps over parallel to the top section and generally perpendicular to the side walls and finally severing the completed box element from the strip of stock.

4. A method of making a telescopic bracelet inner box element comprising the steps of feeding a thin, flat strip of metallic stock having a pair of longitudinally extending, parallel ribs of rectangular cross-section projecting from one surface thereof through a series of stations, punching a series of holes in the strip for guiding and step feeding the stock through the series of stations, periodically completely removing longitudi-

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nal portions of the ribs corresponding in length to the desired width of the top wall of the box element at transversely aligned locations on the strip, transversely scoring the stock on the surface thereof opposite to said one surface and from rib to rib at locations spaced sufficiently to provide stock therebetween for the top and side walls of the inner box element, punching out transverse sections of stock including rib portions so as to leave generally rectangular blanks wider than said score lines by the desired width of the flaps for the bottom of the box element and joined to the sides of the stock by narrow joiner portions and so as to remove corner sections of the blanks transversely coincidental with the ribs so as to leave a pair of rib portions at each end of the blank corresponding in length to the desired width of the side walls of the box element, folding transverse portions of the blank including the bottom flaps and side walls with the rib

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portions thereon while holding the top section so that the flaps and side walls are at right angles to the top section, then folding the flaps inwardly over the score lines and parallel to the top section and generally perpendicular to the side walls, and finally severing the completed box element from the strip of stock.

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