June 17, 1941. E. PRESTINARI ET AL 2,246,221

METAL STRAP CONSTRUCTION

Filed July 3, 1940

Fig. 1.

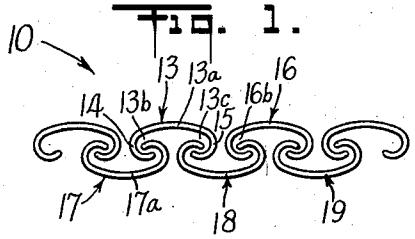


Fig. 2.

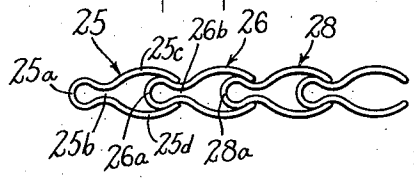


Fig. 3.

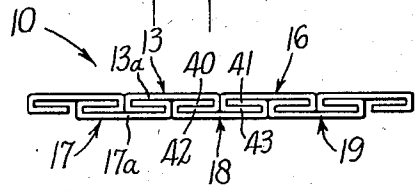


Fig. 4.

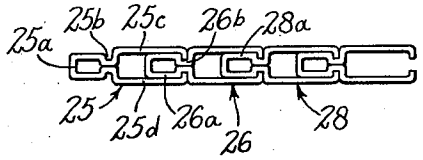


Fig. 5.

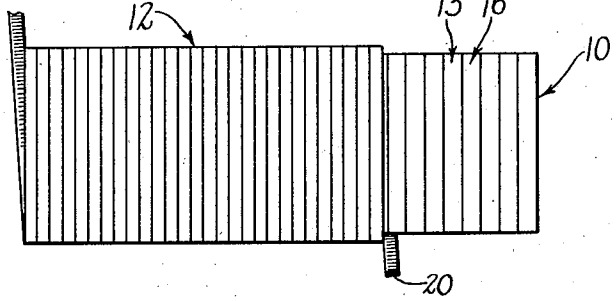


Fig. 6.

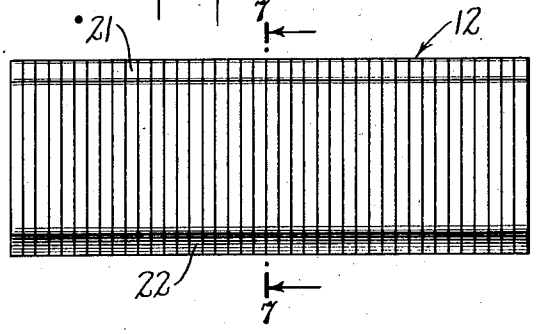
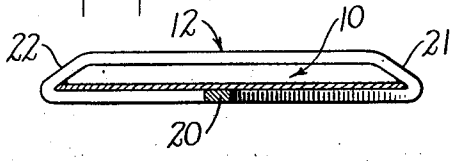


Fig. 7.



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Patented June 17, 1941 2,246,221

UNITED STATES PATENT OFFICE

2,246,221

METAL STRAP CONSTRUCTION

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Application July 3, 1940, Serial No. 343,732

6 Claims. (Cl. 59—80)

This invention relates to bracelet band construction.

One of the objects of this invention is to provide a bracelet band construction which is simple, practical, and thoroughly durable. Another object is to provide a construction of the above character which may be manufactured from inexpensive materials without undue labor costs. A further object is to provide a construction of the above character in which the material is so disposed as to attain a high degree of strength without heavy construction. Another object is to provide a construction of the above character having a maximum of resistance to longitudinal strains, while, at the same time, being light, graceful, and pleasing in appearance. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, as will be exemplified in the structure to be hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, in which are shown several of the various possible embodiments of my invention:

Figure 1 is a vertical sectional view of the core of one embodiment of my bracelet band during manufacture;

Figure 2 is a vertical sectional view similar to Figure 1 of the core of another embodiment of my invention;

Figure 3 is a vertical sectional view of the core shown in Figure 1 at an intermediate stage of manufacture;

Figure 4 is a vertical sectional view of the core shown in Figure 2 at an intermediate stage of manufacture;

Figure 5 is a top plan view of the bracelet band in a more advanced stage of manufacture;

Figure 6 is a top plan view of a section of a finished bracelet band; and

Figure 7 is a sectional view taken along the line 7—7 of Figure 6.

As conducive to a clearer understanding of certain features of this invention, it might here be pointed out that the need for a metal bracelet band, having the characteristics of leather or the like in so far as possible, has always been appreciated. However, attempts to design a bracelet band of this character have been disappointing because of an apparent inability to achieve the desired characteristics without sacrificing durability and quality. For example, in past constructions, if this type of band is made flexible enough to be comfortable when worn on the wrist, such flexibility is an indication of an inherent weakness in structure with resultant deterioration from use by wear, erosion, and other factors. Where the bracelet band is made strong enough to stand up in use, the stiffness thereof makes it uncomfortable for wear. Furthermore, bracelet bands of this type have presented many problems of manufacture, necessitating the use of expensive materials with high labor cost. Another object of this invention is to provide a construction for overcoming the above-mentioned difficulties as well as many others.

Referring now to the drawing and to Figure 5 in particular, the bracelet band includes a core, generally indicated at **10**, covered by a wire wrapping **12**. Core **10** comprises a series of metal elements which extend transversely of the band and are interlocked together along their longitudinal edges. After the core is formed, the wire wrapping **12** is wrapped transversely therearound. This makes a band having a maximum of flexibility longitudinally of its length and results in the elimination of the difficulties referred to hereinabove.

In the construction of the type of core shown in Figure 3, a series of elements are first secured together in the manner shown in Figure 1. Each of the elements consists of a top portion and a pair of inwardly curving side walls, which form a pair of channels with the top portion extending longitudinally of the element. Thus, for example, element **13** includes top portion **13*a*** and side walls **14** and **15** which form channels **13*b*** and **13*c***.

In assembly, there are two series of elements, the top portions of each series facing outwardly from the core and extending transversely thereof while their side walls extend inwardly where they interlock to form the center of the core. As best seen in Figure 1, each element serves as a link between two elements on the opposite side of the core, the side walls of the first-mentioned element interlocking with the juxtaposed side walls of the two-last-mentioned elements. Thus, for example, channels **13*c*** and **16*b*** on elements **13** and **16** are connected by element **18**. In like manner, element **18** is connected to its adjacent element **19** by element **16**.

When all of the elements are assembled in interlocked relationship as above described, the core is passed between pressure rollers, which flatten the channel-shaped side walls of the elements so that the interlocking tongue portion of each channel is held between the tongue por-

tion and top portion of one of the elements in the series of elements on the opposite side of the core. Thus, for example, tongue portions **40** and **41** are in engagement with and held between the tongue portions **42** and **43** and the top portions of elements **13** and **16**. Furthermore, the flattening of the hook-shaped side walls by decreasing their thickness increases the width of the elements, causing each elements in a series to abut against the adjacent elements in its series. Thus, a core has been disclosed having flat external surfaces with a minimum of interstices therein. Furthermore, all of the elements are securely interlocked but are so connected that a maximum of flexibility is permitted lengthwise of the core.

Referring now to Figures 2 and 4 in which another embodiment of my invention is shown, the core comprises a series of tubular-shaped elements extending transversely thereof and having a cross section having the general shape of a figure **8**. One side of each element, or the bottom of the figure **8**, is open and the other end, the top or head portion of the figure **8**, is preferably smaller than the lower portion and adapted to fit therein. Thus, each element consists of a head portion, a neck portion, and a pair of legs. For example, the element generally indicated at **25** comprises a head **25***a*, a neck portion **25***b*, and a pair of legs **25***c* and **25***d*.

In assembly, the head portion of each element lies between the legs of the lower portion of one of its adjoining elements and its legs enclose the head portion of the other. As the distance between the ends of the legs is substantially the same as the width of the neck portion of the elements, all of the elements are transversely interlocked to their adjoining elements. Thus, for example, the head **26***a* of element **26** lies between the legs **25***c* and **25***d* of element **25** which curve inwardly to grip the neck portion **26***b* of element **26**. Likewise, the legs of element **26** interlock with the head portion **28***a* of element **28** to secure these elements together.

After the tubular elements are secured together in this manner, they are passed between pressure rollers. These flatten the sides of the lower portions of the elements which presses them into contact with and flattens the head portions lying therein. The ends of the legs are pressed downwardly into the neck portion of the element they contact, securely interlocking the elements together (Figure 4). In this form of core also there are a minimum of interstices left between the members comprising the core which is a material aid in overcoming the difficulties pointed out hereinabove.

After the cores shown in Figures 1 and 2 have been flattened to press their elements into secure interlocking relationship, a wire wrapping **12** is applied thereto. This wrapping is preferably made of a metal wire of rectangular cross section **20** (Figures 5 and 7), but usually very thin. It is here shown much thicker for illustrative purposes. This wire is wrapped tightly around the core transversely thereof, preferably with each turn abutting against the exposed edge of the preceding turn. This provides a practical and efficient wrapping which forms two continuous flat surfaces for the band.

To set the wrapping firmly in position and to press the wrapping into close contact with the core, the band is next passed between pressure rollers, which, in addition to applying pressure to the top and bottom of the band, bevels its edges **21** and **22** (Figures 6 and 7). The beveling of the edges not only enhances the appearance of the band but also interlocks the turns of the wrapping with the edges of the core.

By reference to Figures 3 and 4, it can be seen that it is necessary for certain portions of each element to move outwardly from the top or bottom surfaces of the core in order to break its connection to the element to which it is attached. Thus, for example, to disconnect elements **13** and **17** (Figure 3), the top portions **13***a* and **17***a* must be moved outwardly away from each other before they can be moved longitudinally of the band to break the interlocking connection. Likewise, referring to Figure 4, legs **25***c* and **25***d* must be moved outwardly away from each other to release their grip on the head and neck portions of element **26**. Accordingly, when the wrapping **12** is applied to the band, it holds the elements in interlocked relationship, for they cannot become disconnected without movement of certain portions thereof transversely of the band, and this is prevented by the wrapping.

Thus, a bracelet has been disclosed which is of simple yet sturdy construction. A maximum of flexibility is provided longitudinally of the band by having the elements interlocked transversely of the core, and because there are a minimum of interstices between the elements, the difficulties above referred to are overcome. It will thus be seen that I have provided a thoroughly practical and efficient construction in which the several objects hereinabove mentioned, as well as many others, are accomplished.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

We claim:

1. In bracelet band construction, in combination, a series of elements extending transversely of said band, hook-shaped edges formed on said elements, said hook-shaped edges of each of said elements interlocking with the hook-shaped edges of its adjacent elements, and a wrapping covering said elements, said wrapping being the sole means to prevent movement of said elements transversely of said band with respect to each other in both vertical and horizontal directions and thus to hold securely said elements in interlocked relationship.

2. In bracelet band construction, in combination, a series of elements extending transversely of said band, hook-shaped edges formed on said elements, said hook-shaped edges of each of said elements interlocking with the hook-shaped edges of its adjacent elements, said hook-shaped edges when in interlocked relationship having their interlocking portions extending longitudinally of said band, and a wrapping of metallic wire wrapped around said elements transversely of said band and covering said elements, said wrapping being the sole means to prevent movement of said elements transversely of said band with respect to each other in both vertical and horizontal directions and thus to hold securely said elements in interlocked relationship.

3. In bracelet band construction, in combination, a series of elements, each comprising a top wall and hook-shaped side walls, each of said side walls being interlocked with the side wall

of an element having its top wall positioned on the opposite side of said band, said elements when in interlocked relationship forming a core for said bracelet band, the end portions of said hook-shaped side walls extending longitudinally of said band, and a wire wrapping completely covering said elements, said wire extending transversely of said band and interlocking with the edges of said core, said wrapping being the sole means to prevent movement of said elements transversely of said band with respect to each other in both vertical and horizontal directions and thus to hold securely said elements in interlocked relationship.

4. In bracelet band construction, in combination, a series of tubular-shaped elements extending transversely of said band, each comprising a head portion, a neck portion, and a pair of legs, the legs of each element extending around the head of an adjacent element and into its neck portion whereby said elements are interlocked together, and a metallic wrapping covering said elements, said wrapping being the means to prevent movement of said elements transversely of said band with respect to each other in both vertical and horizontal directions and thus to hold securely said elements in interlocked relationship.

5. In bracelet band construction, in combination, a series of tubular-shaped elements, each comprising a head portion, a neck portion, and a pair of legs, the legs of each element extending around the head of an adjacent element and into its neck portion whereby said elements are interlocked together, and a wrapping of metallic wire extending transversely around said elements, each turn abutting against the preceding turn, said wrapping holding the leg portions of each element in interlocking relationship with an adjacent element.

6. In bracelet band construction, in combination, a series of elements, each comprising a top wall and hook-shaped side walls, each of said side walls being interlocked with the side wall of an element having its top wall positioned on the opposite side of said band, said elements when in interlocked relationship forming a core for said bracelet band, and a wrapping extending around said core, said wrapping being the sole means to prevent movement of said elements transversely of said band with respect to each other in both vertical and horizontal directions and thus to hold securely said elements in interlocked relationship.

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