

July 14, 1964

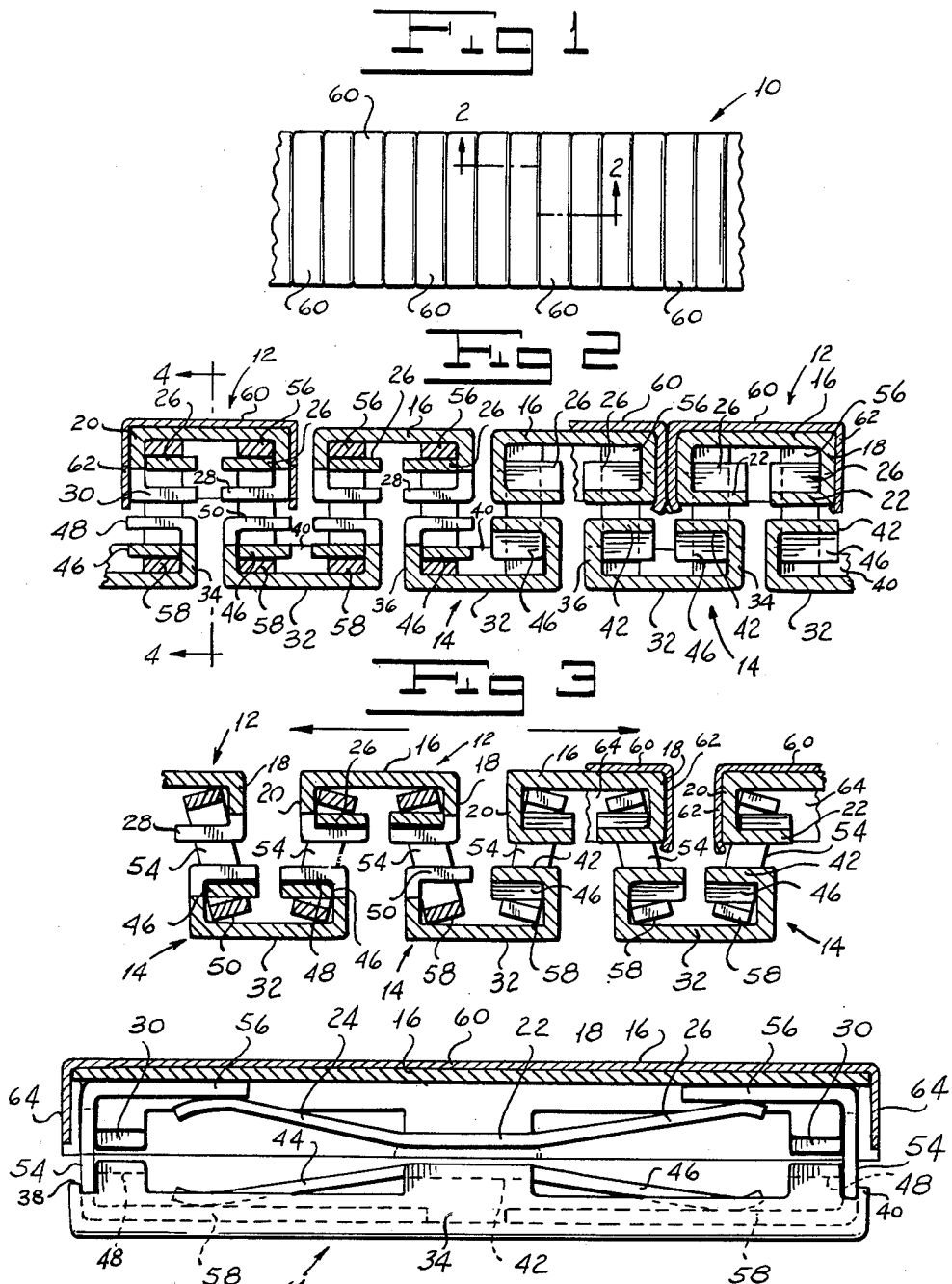
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UNITARY SPRING AND LINK CONSTRUCTION

Filed March 7, 1962

2 Sheets-Sheet 1



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FIG 5

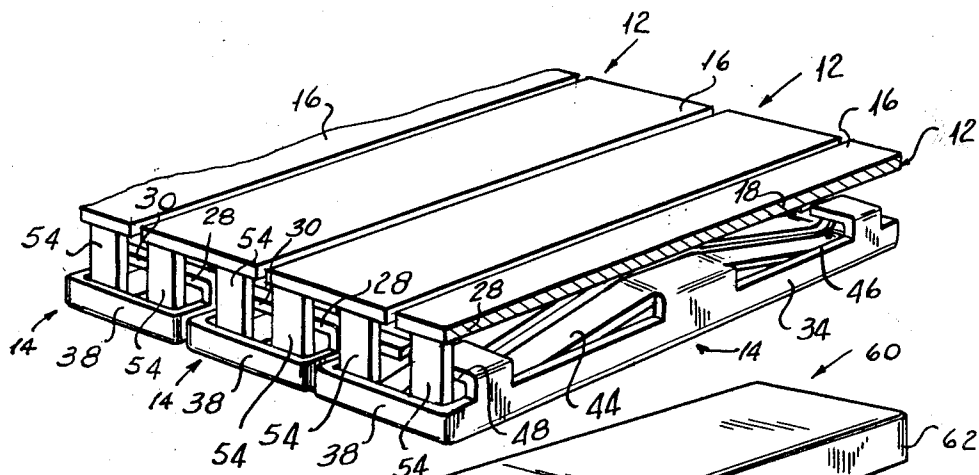
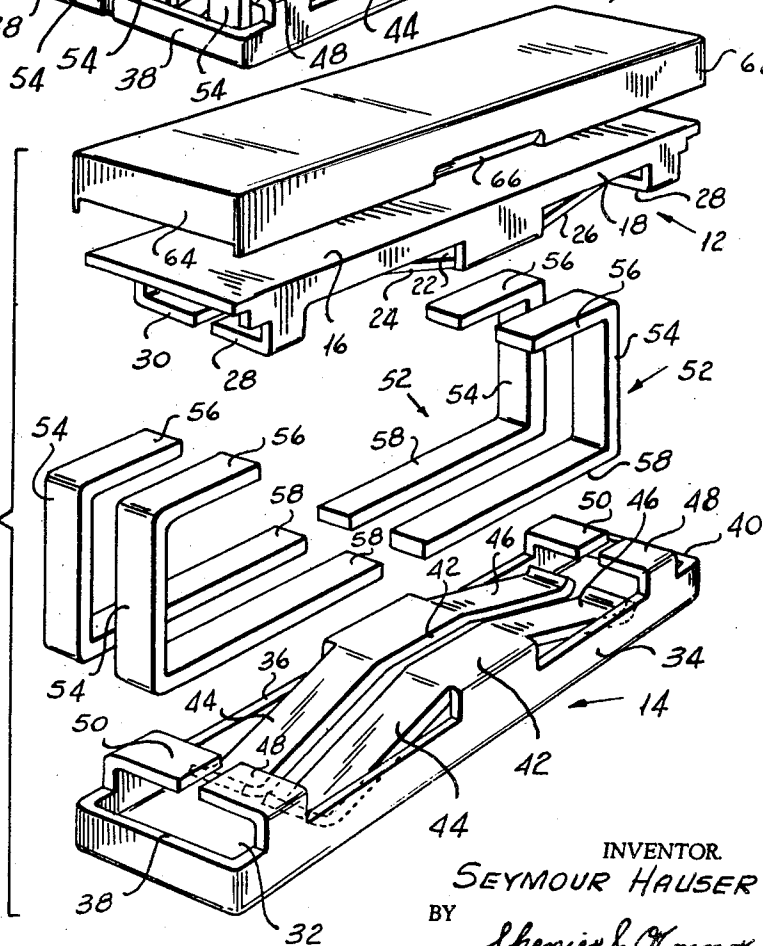


FIG 6



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UNITARY SPRING AND LINK CONSTRUCTION
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Filed Mar. 7, 1962, Ser. No. 178,080
12 Claims. (Cl. 59-79)

My invention relates to an integral spring and link construction and more particularly to a construction for use on an expandable band which is simpler to construct and which is easier to shorten than are expandable bands of the prior art.

There are known in the prior art, expandable bands which are used to hold a watch or an article of jewelry on the wearer's wrist. These expandable bands of the prior art include a plurality of upper links and a plurality of lower links joined by suitable connectors. Springs are employed to act on the parts of the assembly normally to cause the band to assume a contracted condition. When the band is to be slipped onto or off the wearer's wrist it is expanded against the action of these biasing springs. Most bands of the prior art are provided with decorative caps secured to the upper links by any suitable means. It will readily be appreciated that owing to the large number of small parts which make up these assemblies of the prior art, the manufacturing operation is a relatively difficult one.

These bands of the prior art are sold by the manufacturer to retail jewelers who in turn sell the bands to the individual users. It will be understood that for ease in manufacture and for economy of handling the bands which are sold by the manufacturer to the retail distributor all are of the same length. In order that the bands can accommodate wrists of different sizes, provisions must be made for permitting the bands to be shortened when they are sold by the jeweler to his customers. In constructions of the prior art it is necessary that the decorative caps at least or other parts of the band be distorted to permit removal of one or more of the band links as required. Further, owing to the large number of small parts which must be handled, this shortening operation is a relatively difficult one to perform.

I have invented an integral spring and link construction which overcomes the disadvantages of expandable bands pointed out above. My construction includes fewer parts than are required in constructions of the prior art with the result that it is more easily and more simply assembled. My arrangement permits shortening of the band without distortion of any of the parts thereof. My construction permits this shortening operation to be accomplished in a simpler and more expeditious manner than is possible with constructions of the prior art. A band incorporating my construction may be shortened at any point along its length.

One object of my invention is to provide an integral spring and link construction especially adapted for use in an expandable band.

Another object of my invention is to provide an improved expandable band which has fewer parts than do expandable bands of the prior art.

A further object of my invention is to provide an improved expandable band which can be simply and expeditiously shortened.

Yet another object of my invention is to provide an improved expandable band which can be shortened at any point along its length.

A still further object of my invention is to provide an improved expandable band which might be shortened without distortion of any of the parts thereof.

Other and further objects of my invention will appear from the following description.

In general my invention contemplates the provision of an integral spring and link construction for an expandable band made up of a plurality of upper cap receiving links and a plurality of lower links. I form each of the upper and lower links with springs extending longitudinally of the link along the interior thereof. The links of my improved band are joined by U-shaped connectors, the respective legs of which are inserted between one spring arm and the top of an upper link and between one spring arm and the base of a lower link. The connector legs are so shaped that the springs normally urge the band to a contracted condition from which it can be expanded against the action of the springs. The upper links of my band frictionally and resiliently receive caps which serve also to retain the connector legs in the upper links.

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

FIGURE 1 is a fragmentary plan view of an expandable band embodying my integral spring and link construction.

FIGURE 2 is a fragmentary sectional view of the expandable band shown in FIGURE 1 taken along the line 2-2 of FIGURE 1 and drawn on an enlarged scale.

FIGURE 3 is a sectional view of the expandable band shown in FIGURE 2 with the band expanded.

FIGURE 4 is a sectional view of the expandable band shown in FIGURE 2 taken along the line 4-4 of FIGURE 2 and drawn on an enlarged scale.

FIGURE 5 is a perspective view of my improved expandable band with the decorative caps removed from the upper links.

FIGURE 6 is an exploded view illustrating the parts of my improved expandable band.

Referring now to the drawings, my improved expandable band, indicated generally by the reference character 10, includes a plurality of upper links, indicated generally by the reference character 12, and a plurality of lower links, indicated generally by the reference character 14. Each upper link 12 includes a top 16 having respective flanges 18 and 20 formed along its ends. I provide each of the flanges 18 and 20 with a respective offset portion 22 extending inwardly of the link in a direction generally parallel to the top 16. Each of the offset 22 carries a pair of oppositely extending spring arms 24 and 26 integrally formed with the offset. Each of the spring arms 24 and 26 is so shaped as to be biased toward the top 16 of the link 12. From the structure thus far described it will be apparent that each of the upper links 12 has two arms 24 and two arms 26. I provide each of the flanges 18 and 20 with respective inwardly directed offset lugs 28 and 30 which serve to position the connectors in a manner to be described hereinafter. It is to be noted that while I form my links 12 with flanges 18 and 20 extending along the ends of the link, I leave the sides of the upper links open.

Each lower link 14 includes a base 32 having respective flanges 34 and 36 extending along its ends and retaining flanges 38 and 40 which close the sides of each links 14. Each of the flanges 34 and 36 has a central inwardly extending offset 42 which I provide with a pair of oppositely longitudinally extending spring arms 44 and 46. I so shape each of the arms 44 and 46 as to be biased toward the base 32 of the link 14. It will be noted that I turn the ends of all the spring arms 24, 26, 44 and 46 so as to permit the connectors to be inserted in the links with relative ease in a manner to be described hereinafter. Adjacent the ends of each of the flanges 34 and 36 I provide inwardly directed lugs 48 and 50 which assist the lugs 28 and 30 in positioning the connectors and also act as stops and provide holding strength to the assembled band.

The improved band provided with my integral spring

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and link construction includes also a plurality of generally U-shaped connecting members, indicated generally by the reference character 52, which in the preferred form have bases 54, short legs 56 and long legs 58. When the upper and lower links 12 and 14 of my band have been connected in a manner to be described below, I snap a decorative cap, indicated generally by the reference character 60, and formed of a suitable decorative material such, for example, as gold over the top 16 of each of the top links 12. Each cap 60 has a pair of end flanges 62 and side flanges 64. I provide the side flanges 62 with indentations 66 adapted frictionally and resiliently to engage the central offsets 22 of the top links 12. The side flanges 64 assist in retaining the connectors 52 in engagement with the top links 12.

In building up an assembly of connected upper cap receiving links 12 and lower links 14, I insert connectors 52 into the lower links 14 by sliding the legs 58 between a spring arm 46 and the base 32 of the lower link. I next assemble two of the top links 12 on the connectors which have been inserted in the lower links by sliding the legs 56 of the connectors into position between the arms 26 of a pair of upper links and the tops 16 of these links. When this has been done, I take two more U-shaped connectors 52 and assemble them with the links by sliding their longer legs 58 between the arms 44 of the lower link 14 and the base 32 of this link. In the course of this operation the shorter legs 56 of the connectors are slid between the legs 24 of the pair of upper links and the tops 16 of these links. When this is accomplished, the parts have snapped into place and two upper links have been connected to a single lower link.

I repeat the procedure described above for a number of upper and lower links to provide the length of band desired. After the desired length of band has been built up, I snap decorative caps 60 over all of the upper links 12 so that the flanges 64 serve to retain the connectors 52 in the upper links. It will be appreciated that lower link flanges 38 hold the connectors 52 in position in the lower links. The lugs 48 and 50 of the lower links and the lugs 28 and 30 of the upper links properly position the connectors to restrain them against appreciable movement out of the intended position. In use of my expansible band, it normally occupies the condition illustrated in FIGURE 2 in which the spring arms 44 and 46 of the lower link and the spring arms 24 and 26 of the upper link act on the connector legs 56 and 58 to urge the legs respectively against the top 16 of the upper link and against the base 32 of the lower link. When the band is expanded by pulling the links apart in the direction of the arrows in FIGURE 3, the legs 56 and 58 rotate to cam the spring arms 24 and 26 and 44 and 46 away from the top 16 and away from the base 32 to permit the band to be stretched as is required, for example, when it is to be removed from the wearer's wrist. When the band is released it returns to its contracted condition against the action of the spring arms.

When it becomes necessary to shorten the band to accommodate a small wrist, one of the decorative caps 60 first is pried off the upper link in the area in which the shortening operation is to take place. Next, the two sections of the band are grasped between the thumb and forefinger of each hand and are twisted slightly relative to each other. Next, the sections are slid relative to each other to cause the connector 52 facing the operator to become loose. This connector is then removed. At this point in the shortening operation the band has been separated into two parts. Next, the operations described are repeated to remove the portion of the band to produce the required shortening thereof. The remaining parts of the band are then reassembled by sliding the links relative to each other to cause the connector which has been left on the far side of one of the sections to slide into the appropriate link. The connector which has been removed is inserted into the two partially connected links from the

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side facing the operator until it has snapped into position. When this has been achieved, the decorative cap 60 is snapped back on the upper link and the shortening operation is complete.

It will be seen that I have accomplished the objects of my invention. I have provided a unitary spring and link construction which permits an expansible band to be made with fewer parts. My band permits of shortening without distortion of any of the parts thereof. A band incorporating my unitary spring and link construction is simpler to assemble than are bands of the type known in the prior art. It can be shortened at any point along its length in a relatively simple and expeditious manner.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of our claims. It is further obvious that various changes may be made in details within the scope of our claims without departing from the spirit of our invention. It is, therefore, to be understood that our invention is not to be limited to the specific details shown and described.

Having thus described my invention, what I claim is:

1. In an expansible band, a link comprising a base and a cantilever spring arm unitary with said base.

2. In an expansible band, a link comprising a base, and an inwardly directed offset carried by said base and a resilient arm unitary with and extending from said offset toward said base.

3. In an expansible band, a link comprising a base extending in a direction transverse to the length of said band, a pair of inwardly directed offsets carried by said base, and respective spring arms unitary with and extending from said offsets toward said base.

4. In an expansible band, a link comprising a base extending in a direction transverse to the lengths of said band, a pair of inwardly directed centrally located offsets carried by said base and respective sets of spring arms unitary with said offsets and extending toward said base.

5. An expansible band including in combination a plurality of upper links, a plurality of lower links, respective springs unitary with said links and means in engagement with said springs for connecting said upper links to said lower links whereby said springs urge said band to contracted condition.

6. An expansible band including in combination a plurality of upper links, a plurality of lower links, respective springs unitary with said links and U-shaped connectors having legs in engagement with said springs for holding said upper and lower links together.

7. An expansible band including in combination a plurality of links each having a base and a spring arm unitary with and extending along said base and a plurality of U-shaped connectors having legs for connecting said links, each of said legs being disposed between a spring and a base of a link.

8. An expansible band including in combination a plurality of upper links, a plurality of lower links, each of said links comprising a base and a spring arm unitary with and extending along said base, a plurality of U-shaped connectors having legs for connecting said upper and lower links, each of said legs being disposed between a spring arm and a base of a link and means comprising caps carried by said upper links for retaining said legs in position.

9. An expansible band including in combination a plurality of upper links, a plurality of lower links, each of said links having a base and respective inwardly directed offsets carried by said base and respective pairs of spring arms unitary with and extending from said offsets toward the base and a plurality of U-shaped connectors having legs for connecting said upper and lower links, each of said legs being disposed between a spring arm and a base.

10. An expansible band including in combination a plurality of upper links, a plurality of lower links, each of

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said links having a base and respective inwardly directed offsets carried by said base and respective pairs of spring arms unitary with and extending from said offsets toward said base, a plurality of U-shaped connectors each having a short leg and a longer leg, said short legs each being disposed between a spring arm and an upper link base and each of said longer legs being disposed between a spring arm and a lower link base and means for retaining said legs in position between said arms and said bases.

11. An expansible band including in combination a plurality of upper links, a plurality of lower links, each of said links having a base and respective inwardly directed offsets carried by said base and respective pairs of spring arms unitary with and extending from said offsets toward said base, a plurality of U-shaped connectors each having a short leg and a longer leg, said short legs each being disposed between a spring arm and an upper link base and each of said longer legs being disposed between a spring arm and a lower link base, end flanges on said

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lower links for retaining said longer legs in position and caps on said upper links for retaining said shorter legs in position.

12. An expansible band including in combination a plurality of upper links, a plurality of lower links, each of said links comprising a flat leaf spring unitary with said link and extending along its base and a plurality of U-shaped connectors with flat legs having a greater width than thickness and being disposed between one of said springs and the base carrying said spring whereby said springs normally urge said band to contracted condition.

References Cited in the file of this patent

UNITED STATES PATENTS

2,957,303	Sasaki	Oct. 25, 1960
3,084,503	Wolf	Apr. 9, 1963

FOREIGN PATENTS

896,575	Germany	Nov. 12, 1953
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