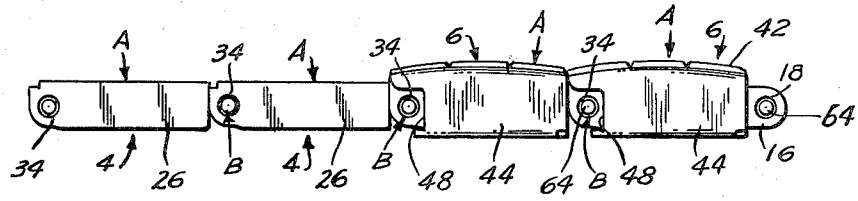
Jan. 23, 1962 G. VOLLET 3,017,682

TELESCOPING-TYPE EXPANSIBLE BRACELET WITH DETACHABILITY FEATURE AND SPRING PIN FOR USE THEREIN

Filed Oct. 6, 1958 2 Sheets-Sheet 1

FIG. 1



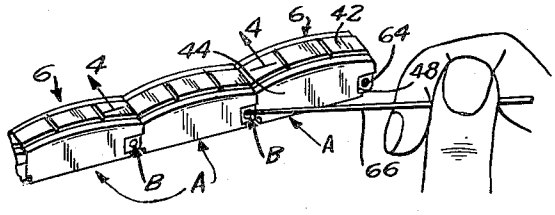


FIG. 2

FIG. 3

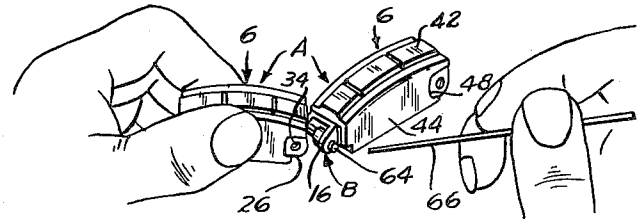
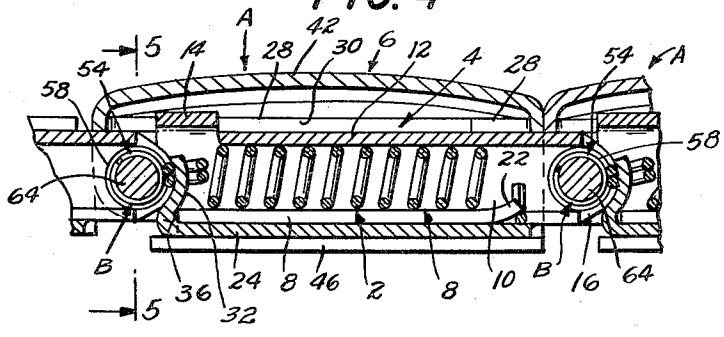


FIG. 4



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Filed Oct. 6, 1958 2 Sheets-Sheet 2

FIG. 5

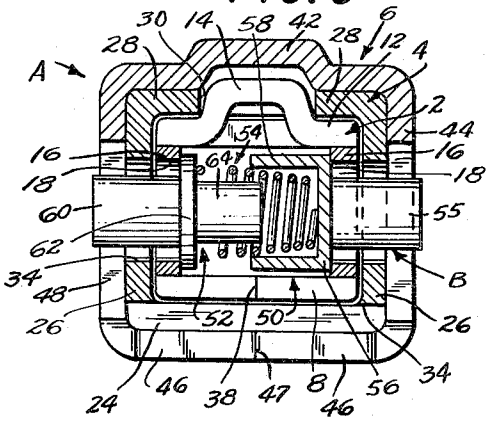


FIG. 6

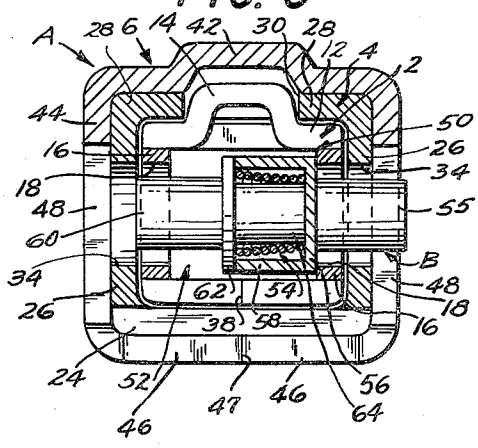


FIG. 7

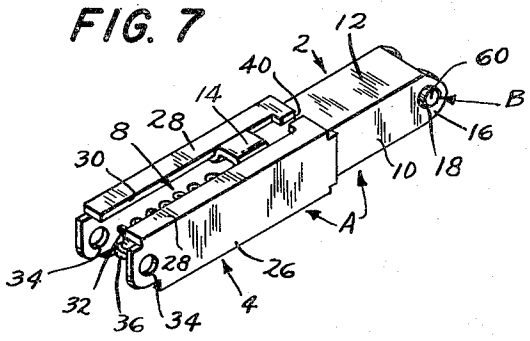
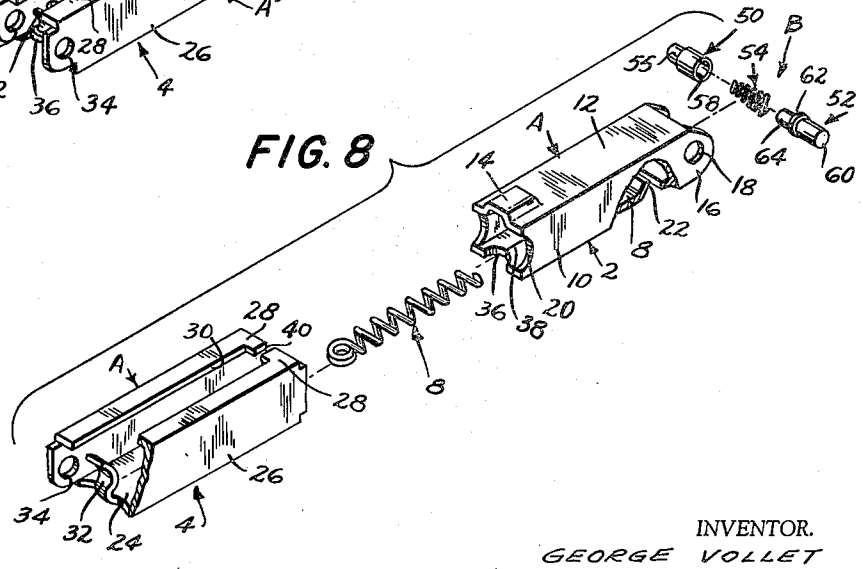


FIG. 8



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United States Patent Office 3,017,682 Patented Jan. 23, 1962

3,017,682

TELESCOPING-TYPE EXPANSIBLE BRACELET WITH DETACHABILITY FEATURE AND SPRING PIN FOR USE THEREIN

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Filed Oct. 6, 1958, Ser. No. 765,356
3 Claims. (Cl. 24—265)

The present invention relates to a structure by means of which the links of bracelet linkages may readily be detached from one another. It is particularly adapted for use in resiliently expandible linkages of the telescoping type, but is not necessarily limited thereto.

To the retail jeweler the inventory problem is quite critical. Not only does his inventory represent a substantial investment, but the space in which to store the inventory is usually at a premium. The problem is particularly critical with respect to items which must be carried in various sizes. Resiliently expandible watch bracelets are in that category. Each manufacturer produces a substantial number of different bracelet styles in order to appeal to as many prospective purchasers as possible. If the retail jeweler is to make a sale he must therefore carry a number of different bracelet styles. His problem is greatly complicated by the fact that the bracelet must fit the wrist of the prospective user, and each wrist may be of a different size. Consequently each style of bracelet has been sold in five different sizes, extra short, short, regular, long and extra long. Hence a jeweler must not only carry a large number of different styles of bracelets but must carry each style in five different sizes in order to be sure that he will be able to furnish a prospective purchaser with the item which he desires.

It is therefore quite desirable that bracelet linkages be constructed so that individual links or groups of links can be removed therefrom or attached thereto by the jeweler himself. Under these circumstances the jeweler's inventory problem is greatly simplified. He need only carry each bracelet style in a single size, and he can then fit that bracelet to the wrist of the prospective user at the time of sale. However, as is well known, wrist watch bracelets are subjected to considerable abuse by their wearers. The bracelet, when it leaves the jeweler, must therefore have its links fastened to one another sufficiently securely as to withstand that abuse without coming apart.

Thus the requirements for a bracelet linkage of the type under discussion appear to be antithetical. The links must be separable readily enough so that the jeweler can fit the bracelet to the purchaser, but the connection between the links must be sufficiently secure so that the links, when assembled by the jeweler, will remain thus assembled.

In accordance with one aspect of the present invention a novel type of spring pin is employed to secure adjacent links to one another in a reliable and dependable manner but still permit their detachment when that is desired. This type of construction is capable of use in non-expansible bracelet linkages composed of interconnected rigid links, but it is particularly well adapted for use in conjunction with resiliently expansible bracelet linkages of the telescopic type, in which the bracelet is formed of a plurality of sets of telescopically related outer and inner links resiliently urged into telescoped relation. Many different, and usually quite complex, structures have been proposed in an attempt to provide for detachability in a linkage of this type, but all have fallen short of success, largely because of cost of manufacture, complexity of manipulation involved to achieve detachability, unreliability of operation, or a combination of these factors.

The structure of the present invention solves all of the above problems in a signally effective manner. Connection and disconnection of adjacent links is achieved simply, reliably, and with only a minimal amount of manipulation required. The spring pin which connects the adjacent links is readily assembled with the links and will not become disassembled or disoriented when manipulated during attachment or detachment of the links. When sets of telescoping inner and outer links are provided, as are here specifically disclosed, the outer link is provided with a shell which hides the functional portions of the link set, imparts a desired ornamental appearance to the link set, and nevertheless does not interfere with the manipulation of the bracelet with regard either to telescopic expansion or link detachment. The entire construction is simple, sturdy and inexpensive.

To the accomplishment of the above, and to such other objects as may hereinafter appear, the present invention relates to the construction of a link bracelet the links of which can be detached from one another and to the construction of a spring pin used therein, all as defined in the following claims and as described in this specification, taken together with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a portion of a bracelet linkage constructed according to the present invention, the two right hand sets of links having an ornamental cover applied thereto;

FIG. 2 is a three-quarter perspective view illustrating the first step in the detachment of one link from another;

FIG. 3 is a view similar to FIG. 2 but illustrating a succeeding stage in the detachment procedure;

FIG. 4 is a cross sectional view taken along the line 4—4 of FIG. 2;

FIG. 5 is a cross sectional view taken along the line 5—5 of FIG. 4;

FIG. 6 is a view similar to FIG. 5 but showing the position which the spring pin assumes when one of its parts is pushed inwardly toward the other preparatory to detaching adjacent links;

FIG. 7 is a three-quarter perspective view of the inner and outer links of a telescopically related set of links, the links being shown in expanded position; and

FIG. 8 is a three-quarter perspective exploded view of the elements of FIG. 7.

The bracelet linkage of the present invention comprises a series of link assemblies generally designated A detachably connected at their ends by means generally designated B. In the form here specifically disclosed the link assemblies A are of the telescopically expandible type and comprise an inner link generally designated 2 telescopable with respect to an outer link generally designated 4 which is provided with an ornamental cover generally designated 6, a spring generally designated 8 being active between the inner and outer links 2 and 4 to urge them into telescoped relation. The inner link 2 comprises a bottom wall 8, side walls 10 and a top wall 12, a central portion of the top wall 12 being struck upwardly at 14. At one end of the inner link 2 the side walls 10 extend outwardly beyond the top and bottom walls 8 and 12 to define ears 16 with registering apertures 18 formed therein. At the other end of the side walls 10 may be recessed, as at 20. A portion of the bottom wall adjacent the ears 16 may be struck up, as at 22.

The outer link 4 comprises a bottom wall 24, side walls 26 and inwardly extending top walls 28, an elongated opening 30 being provided between portions of the top walls 28. A finger 32 extends up from the bottom wall

24 at one end thereof, and the side walls 26 at that end are provided with registering apertures 34. The inside space of the outer link 4 is sufficient to permit the inner link 2 to be received and telescoped therein, the upstruck portion 14 of the inner link 2 being received in and slidable along the space 30 in the upper wall 28 of the outer link 4. One end of the spring 8 is received over the finger 32 on the outer link 4 and the other end of the spring 8 is received under the upstruck portion 22 on the inner link 2, the spring thus pulling the links 2 and 4 into telescoped relation until the inner link bottom wall 8 abuts against the finger 32. A cutout portion 36 may be provided at the end of the inner link bottom wall 8, as may best be seen in FIG. 8, within which the finger 32 is adapted to be received when the links are fully telescoped. In their fully telescoped position the ears 16 of the inner link 2 extend out beyond an end of the outer link 4, and those portions of the outer link side walls 26 which carry the apertures 34 extend out beyond the opposite end of the telescoped inner link 2. Outward movement of the inner link 2 relative to the outer link 4 is limited by engagement between the upstruck portion 14 on the inner link 2 and those portions of the outer link top walls 28 which define the closed end of the passage 30. The inner link 2 may be formed from a single sheet of metal or other structural material the ends of which meet along the line 38 substantially midway of the bottom wall 8, and the outer link 4 may similarly be formed from a single sheet of metal or other structural material the ends of which meet along the line 40 substantially midway of the width of the top wall 28. The cover 6 for the outer link 4, which is fixed thereto, serves to hide from view the operative portions of the expansible set of links and to impart thereto a desired ornamental appearance. The cover 6 may also be formed from a single sheet of material comprising an ornamented top wall 42, side walls 44 and bottom walls 46 which meet along the line 47 substantially midway of the width of the outer link 4. The length of the cover 6 corresponds to the length of the outer link 4, so that the inner link ears 16 extend out therefrom. In addition, the side walls 44 of the cover 6 are cut away at 48 so as to expose those portions of the side walls 26 which carry the apertures 34.

The ears 16 of the inner link 2 of each link assembly A are receivable inside the apertured ends of the side walls 26 of the outer links 4 of the next adjacent link assembly A with the apertures 18 and 34 registering. The means B for releasably retaining the link assemblies A connected to one another is in the form of a resilient spring pin assembly consisting generally of first and second parts 50 and 52 with a spring 54 interposed therebetween. The part 50 comprises a tip portion 55 of a size such as to be freely passable through the apertures 18 and 34, an enlarged portion 56 of a size such as not to be passable through the apertures 18, and a hollow cup-like portion 58. The second part 52 comprises a tip portion 60 capable of freely passing through the apertures 18 and 34, an enlarged portion 62 which will not pass through the aperture 18, and a trailing portion 64 of a size such as to be freely receivable in the cup-like portion 58 of the first part 50 with appreciable clearance. The spring 54 has one end abutting against the bottom wall of the cuplike portion 58 of the first part 50, and the other end abutting against the enlarged portion 62 of the part 52, the spring 54 being maintained in compression so as to resiliently urge the two parts away from one another. The parts 50 and 52, with the spring 54 therebetween, are positioned between the ears 16 on the inner link 2 with their tip portions 54 and 60 extending out through and beyond the apertures 18, thereby forming a permanent part of the inner link 2. When a pair of adjacent link assemblies A are connected, as shown in FIGS. 1, 2, 4 and 5, the tip portions 54 and 60 also extend into the apertures 34 in the outer links 4 of the next adjacent link assembly.

If it is desired to separate a pair of adjacent link assemblies A all that is required is to engage the tip portion 55 or 60 of one of the spring pin parts and push it inwardly against the action of the spring 54 until that tip portion no longer is received in the corresponding aperture 34. This may easily be done through the use of any suitable pointed tool 66, as illustrated in FIG. 2. As may be seen from FIG. 6, when this is done the enlarged portion 62 on the second spring pin part 52 will engage the open end of the cup-shaped portion 58 of the first spring pin part 50 before the pressed-in tip portion (there specifically indicated as the tip portion 60) can escape from the aperture 18 through which it passes. Consequently manipulation of the spring pin assembly B will not result in dislocation of its parts.

After the selected tip portion 60 or 55 has been moved out from the aperture 34 in which it normally is received the two adjacent link assemblies A may be bent away from one another, as shown in FIG. 3, the inward pressure on the tip portion 60 being released as soon as it no longer registers with the aperture 34. Sufficient clearance is provided between the tip portions 60 and 55 and the apertures 34 to permit this movement to be accomplished. Once the adjacent link assemblies A have reached the position shown in FIG. 3 they may be completely separated from one another merely by sliding the other aperture 34 off of the tip portion 55 or 60 then received in it. To shorten a bracelet this detaching procedure is repeated in order to completely separate one or more link assemblies A from the overall linkage, after which the ends of the linkage may be reconnected merely by reversing the described disconnection procedure.

It will be noted from FIG. 5, which discloses a preferred form of the invention, that the spring 54 is in the form of a tapering helix the narrow end of which is received within the cup-like portion 58. The inner diameter of this narrow portion is closely comparable to the outer diameter of the trailing portion 64 of the second spring pin part 52. Consequently, as may best be seen from FIG. 6, when the two spring pin parts 50 and 52 are telescoped together against the action of the spring 54, the trailing portion 64 of the second spring pin part 52 will be snugly received inside the spring 54, and preferably will be frictionally engaged thereby, the spring 54 therefore serving to hold the part 52 in proper aligned relationship with the part 50 despite the clearance between the trailing portion 64 and the cup-like portion 58. In addition, engagement between the spring 54 and the trailing portion 54 will provide a slight time delay between the moment that pressure is released from the compressed spring pin assembly and the moment that that assembly begins to expand axially. This facilitates the detaching and attaching operation by making it easier to compress the spring pin assembly B and then shift the relative positions of the adjacent link assemblies A by moving the corresponding aperture 34 toward or away from registration with the in-pressed tip portion, depending upon whether attachment or detachment is being effected.

The spring pin assembly B constitutes a built-in part of the link assembly A, and, with reference to the particular embodiment here disclosed, of the inner link 2 thereof. It is specially designed for the functions which it is to perform and is specially adapted to the environment in which it is used. Its parts are, taking into consideration the necessarily small space in which it must be accommodated, exceptionally sturdy. The overall construction is simple and inexpensive, but it never-the-less retains the link assemblies A reliably in connected condition and permits their detachment when desired by means of extremely simple manipulation and with the use of only rudimentary tools.

While but a single embodiment of the present invention has been here disclosed, it will be apparent that many variations may be made therein, all within the

scope of the instant invention as defined in the following claims.

I claim:

1. A spring pin comprising first and second parts with a spring adapted to be interposed therebetween, said first part comprising from one end to the other, a tip, an enlarged portion, and a cup-like trailing portion, said second part comprising from one end to the other, a tip, an enlarged portion, and a trailing portion smaller than said enlarged portion and receivable in said cup-like portion of said first part with appreciable clearance therearound, said spring being receivable within said cup-like portion and adapted to surround said trailing portion of said second part, to be retained in compression between said cup-like portion of said first part and said enlarged portion of said second part, and active to urge said parts away from one another, said spring comprising a tapering coil spring, the end thereof adapted to be directed toward said first part having an inside cross-section at least slightly smaller than the outside cross-section of at least a segment of the trailing portion of said second part, the end thereof adapted to be directed toward said second part having an inside cross-section larger than the outside cross-section of the trailing portion of said second part, said spring being axially compressible by relative movement of said first part toward said second part for a distance such that said trailing portion of said second part is received within said end of said spring which is adapted to be directed toward said first part, and is adapted to be engaged frictionally thereby.

2. A spring pin comprising first and second parts with a spring adapted to be interposed therebetween, said first part comprising from one end to the other, a tip, an enlarged portion, and a cup-like trailing portion, said second part comprising from one end to the other, a tip, an enlarged portion larger than the inside of said cup-like portion, and a trailing portion smaller than said enlarged portion and receivable in said cup-like portion of said

first part with appreciable clearance therearound, said spring being receivable within said cup-like portion and adapted to surround said trailing portion of said second part, to be retained in compression between said cup-like portion of said first part and said enlarged portion of said second part, and active to urge said parts away from one another.

3. The spring pin of claim 2, in which said spring comprises a tapering coil spring, the end thereof adapted to be directed toward said first part having an inside cross-section at least slightly smaller than the outside cross-section of at least a segment of the trailing portion of said second part, the end thereof adapted to be directed toward said second part having an inside cross-section larger than the outside cross-section of the trailing portion of said second part, said spring being axially compressible by relative movement of said first part toward said second part for a distance such that said second trailing portion of said second part is received within said end of said spring which is adapted to be directed toward said first part, and is adapted to be engaged frictionally thereby.

References Cited in the file of this patent

UNITED STATES PATENTS

1,626,139	Kraysler	Apr. 26, 1927
1,629,976	Smith	May 24, 1927
1,663,079	Hart	Mar. 20, 1928
1,745,565	Wittman	Feb. 4, 1930
2,507,701	Feiner et al.	May 16, 1950
2,652,612	Valcourt	Sept. 22, 1953
2,702,451	Schwaibold	Feb. 22, 1955
2,762,191	Gronneberg	Sept. 11, 1956

FOREIGN PATENTS

613,675	Great Britain	Dec. 1, 1948
1,113,447	France	Dec. 5, 1955