Feb. 28, 1950 S. LEVINE 2,499,102

EXTENSIBLE CONNECTOR

Filed Feb. 9, 1946

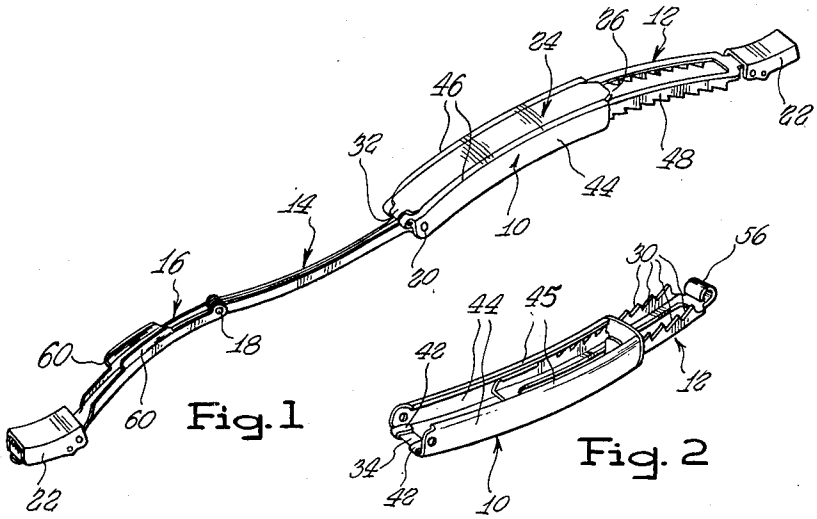


Fig. 1

Fig. 2

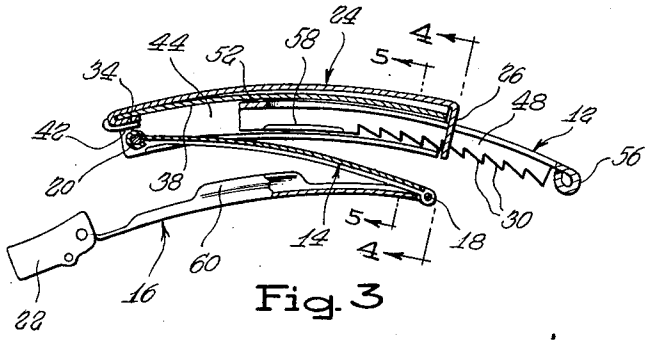


Fig. 3

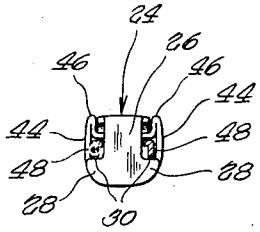


Fig. 4

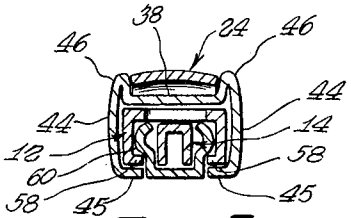


Fig. 5

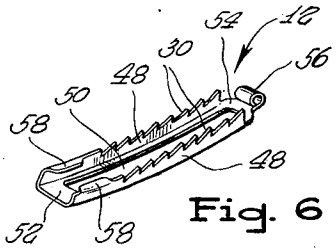


Fig. 6

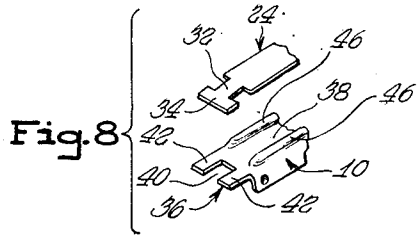


Fig. 8

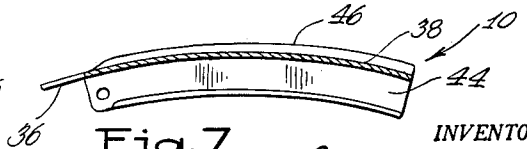


Fig. 7

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EXTENSIBLE CONNECTOR

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10 Claims. (Cl. 24—71)

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The present invention relates to extensible connectors for bracelets, wrist watch straps or bands, etc.

In accordance with the present invention, the connector comprises a main link in which a ratchet member or link is slidably adjustable, and the main link is provided with a detent member for releasably securing the ratchet member in adjusted position, the construction and arrangement of these three parts of the connector being such as to facilitate the operation of the detent member and to eliminate the projection of the detent member from the main link as in certain connectors of known construction. The provision of an adjustable connector of this improved construction and operation constitutes one of the objects of the present invention.

Further, in accordance with the preferred embodiment of this invention, the detent member is arranged in such relation to the main link that it appears as a part of said link rather than as a separate detent with the result that the appearance of the connector is considerably improved in comparison with certain connectors of known construction. The accomplishment of this result constitutes another object of the present invention.

A further object of this invention is to provide a connector which is so constructed and arranged as to greatly reduce or eliminate the possibility of accidental operation of the detent member for releasing the ratchet.

A yet further object of the invention is generally to provide an extensible connector of improved construction and operation.

The above and other objects, features and advantages of this invention will be fully understood from the following description considered in connection with the accompanying illustrative drawings.

In the drawings:

Fig. 1 is an enlarged perspective view of an extensible connector embodying the present invention, the ratchet member being in its outwardly extended position and the foldable links being retracted from the main link;

Fig. 2 is a bottom perspective view, on a larger scale, of the main link and the ratchet member;

Fig. 3 is a longitudinal sectional view of the connector, the foldable links being shown retracted from the main link but disposed in partially folded relation;

Fig. 4 is a sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a sectional view on the line 5—5 of

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Fig. 3, but showing the foldable links within the main or housing link;

Fig. 6 is a bottom perspective view of the ratchet member;

Fig. 7 is an enlarged longitudinal sectional view of the main or housing link;

Fig. 8 is a perspective view of the adjacent end portions of the main link and of the detent member in separated relation and in the pre-assembly forms thereof.

Referring now to the drawings in detail, the extensible connector of the present invention comprises a main or housing link 10, a ratchet member 12, slidable in said main link longitudinally thereof, and the foldable links 14 and 16 which are pivotally connected to each other as indicated at 18, and which are arranged to be housed within the main link 10 or to be retracted therefrom, said link 14 being pivotally connected to the housing link 10 at one end thereof by the pivot pin 20. Also, as here shown, end-attaching members 22 of any suitable construction are pivotally connected to the outer ends of ratchet member 12 and link 16 for the securement to the connector of the ends of a wrist watch band.

In accordance with the present invention a detent member 24 is disposed on the top of the main or housing link 10 and extends longitudinally of the latter. As said housing link as well as the other links are usually longitudinally curved, said detent member is likewise curved longitudinally thereof to conform generally to the curvature of the top of link 10. Said detent member 24 is secured at one end thereof to the adjacent end of link 10 and is provided at its opposite end with an integral detent element 26 which has laterally projected catch portions 28 positioned to releasably engage the teeth 30 of the ratchet member 12 at a point externally of link 10. The detent member 24 may be connected to the link 10 in any suitable way but the illustrated construction which will now be described is preferred. As illustrated in Fig. 8, the detent member is provided with a reduced portion or neck 32 extending from the body portion of the detent member to the end portion 34 which is wider than said neck. The link 10 at the end thereof to which the detent member is connected is provided with a projection 36 continuous with the top wall 38 of said link, said projection having a recess 40. In assembling detent member 24 and link 10 the neck 32 of the detent member is positioned in recess 40 of the projection 36, and the end portion 34 of the detent member is bent under the adjacent end portion of the inner surface of top

wall 38, after which the portions 42 which are at opposite sides of the recess 40 of the projection 36 are bent into engagement with the end portion 34 of the detent member.

The main link 10 is of channel form and comprises in addition to the top wall 38 the laterally spaced side walls 44 which as usual have inturned lower edge portions 45. Said side walls 44 are preferably dimensioned and shaped in relation to the top wall 38 so as to project above the upper or outer surface of said top wall, as clearly illustrated, see particularly Figs. 5 and 7, to form a longitudinally extending groove in which the detent member is positioned as shown. More particularly, the side walls 44 of link 10 have upper portions 46 which form the side walls of said groove, the bottom of which is constituted by the top wall 38 of the link. It will be noted that, as shown in Figs. 3 and 7, the side walls of the groove increase progressively in depth from the end of link 10 to which the detent member is secured toward the opposite end of said link, whereby the groove similarly increases in depth. It will be observed that in the normal or ratchet-holding position of the detent member 24, said detent member releasably engages the ratchet and in that position said detent member is spaced from the bottom of the groove constituted by the top wall 38 of link member 10 so that said detent member can be flexibly moved from said normal position toward said top 38, for releasing the catches 28 of the detent element 26 from the ratchet teeth 30 of the ratchet member 12 to permit movement of the latter longitudinally of the link. The upper or groove-defining portions 46 of the side walls 44 of link 10 are preferably dimensioned so as to project slightly above the outer surface of the detent member 24 in the ratchet-securing position of said detent member whereby to prevent accidental inward flexing movement of said detent member and thereby preventing inadvertent or accidental release of the detent element 26 from the ratchet. On the other hand, when it is desired to release the ratchet member 12 for sliding movement longitudinally of the main link 10, this can be very easily accomplished by merely pressing on the top of detent member 24, preferably at the end thereof adjacent the detent element 26. It will be understood of course that the detent member 24 is made of spring metal stock so that it is flexibly movable toward and away from the top 38 of the main link 10 and that by reason of the connection of one end of said detent members with the adjacent end of link 10, and the engagement of the detent element with the teeth of the ratchet member, the detent member is partly flexed toward said top wall 38 and is thus spring-biased away from wall 38 for holding the detent element 26 in releasable engagement with the teeth of the ratchet member.

The ratchet member 12, which is preferably formed in one piece, has laterally spaced longitudinal side portions 48 which define a longitudinally extending slot 50 through which the detent element 26 projects for releasable engagement with the teeth 30 of the ratchet member. It will be noted that said teeth are formed, as clearly illustrated in Figs. 1, 3 and 4, on the lower edges of the longitudinal portions 48 of the ratchet member so that the upward flexing movement of the detent member 24 results in the engagement of detent element 26 with said ratchet teeth while the downward flexing of said detent member results in the disengagement of the detent element from said ratchet teeth to release the ratchet member for slidable adjustment. The opposite ends of longitudinal portions 48 are preferably integral with the adjacent end portions 52 and 54, the latter being provided with an eye 56 for pivotal connection with the adjacent strap-end connector 22. The ratchet member 12 is guided for sliding movement in the main or housing link 10 by the side walls 44 and by the inturned edge portions 45 of said side walls in a well understood manner. Said ratchet member is provided with inturned end portions 58 which are slidably engageable with the longitudinally extending projecting portions 60 of link 16 for releasably holding the foldable links 14 and 16, in the folded condition thereof, in the main or housing link 10 in all normal adjusted positions of the ratchet member in said housing link.

Thus it is seen that the extensible connector described above is well adapted to accomplish the several objects of the present invention. It will be understood, however, that various changes in the details of construction and in the arrangement of parts may be made and that the invention may be embodied otherwise than as herein illustrated or described without departing from the underlying idea or principles of the invention within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In an extensible connector for bracelets, wrist watch straps, etc., a link, a ratchet member slidable in said link longitudinally thereof, said ratchet member being positioned at the inner surface of said link, and a detent member positioned at the outer surface of said link and secured thereto, said detent member extending longitudinally of said link and being flexibly movable in a direction toward and away from said outer surface of said link and having a detent element releasibly engageable with said ratchet member at a point externally of said link for releasably securing said ratchet member in adjusted position longitudinally of said link.

2. In an extensible connector for bracelets, wrist watch straps, etc., a link, a ratchet member slidable in said link longitudinally thereof, said ratchet member being positioned at the inner surface of said link, and a detent member positioned at the outer surface of said link and secured thereto, said detent member having one end thereof secured to said link and having a detent element at its oppostie end in position at the opposite end of said link to engage the ratchet of said ratchet member at a point externally of said link, said detent member being flexibly movable in a direction toward and away from said outer surface of said link and biased away from said surface so that said detent element is normally in engagement with the ratchet of the ratchet member for releasably securing the latter in adjusted position longitudinally of said link.

3. In an extensible connector for bracelets, wrist watch straps, etc., a channel shaped link having a top wall and side walls, a ratchet member mounted in said link between said sides and slidable longitudinally of said top wall at the inner surface thereof, and a longitudinally extending detent member movably secured to said link and positioned over said top wall thereof, said detent member being flexibly movable toward and away from said top wall in the direction of the thickness of said wall, and having a detent element normally in releasable engagement with the ratchet of said ratchet member at a point ex-

ternally of said link for releasably securing the latter in adjusted position longitudinally of said link.

4. In an extensible connector for bracelets, wrist watch straps, etc., a channel shaped link having a top wall and side walls, a ratchet member mounted in said link between said sides and slidable longitudinally of said top wall at the inner surface thereof, and a detent member movably secured to said link and positioned over said top wall thereof, said detent member being flexibly movable toward and away from said top wall in the direction of the thickness of said wall, and having a detent element normally in releasable engagement with the ratchet of said ratchet member for releasably securing the latter in adjusted position longitudinally of said link, said link having side portions which overlie the side edges of said detent member.

5. In an extensible connector for bracelets, wrist watch straps, etc., a channel shaped link having a top wall and side walls, a ratchet member mounted in said link between said sides and slidable longitudinally of said top wall at the inner surface thereof, and a detent member movably secured to said link and positioned over said top wall thereof, said detent member being flexibly movable toward and away from said top wall in the direction of the thickness of said wall, and having a detent element normally in releasable engagement with the ratchet of said ratchet member for releasably securing the latter in adjusted position longitudinally of said link, said link having side portions which overlie the side edges of said detent member, said side portions of the link extending substantially to the upper surface of said detent member whereby to prevent inadvertent ratchet-releasing movement of said detent member.

6. In an extensible connector for bracelets, wrist watch straps, etc., a longitudinally extending link having a top wall and side walls, a ratchet member slidable in said link longitudinally thereof and guided by said side walls, said ratchet member having laterally spaced longitudinal parts at least one of which is provided with ratchet teeth, and a detent member secured to said link and positioned over said top wall thereof on the outerside of the link, said detent member extending longitudinally of said link and being flexibly movable transversely of the plane of said top wall and having a detent element projecting through the space between said parts of the ratchet at a point externally of said link and releasably engaging said ratchet teeth.

7. In an extensible connector for bracelets, wrist watch straps, etc., a longitudinally extending link having a top wall and side walls, a ratchet member slidable in said link longitudinally thereof and guided by said side walls, said ratchet member having laterally spaced longitudinal parts at least one of which is provided with ratchet teeth, and a detent member positioned over said top wall of the link and extending longitudinally thereof, one end of said detent member being secured to said link at one end of the latter and the opposite end of said detent member having a detent element clear of the opposite end of said link and projecting into the space between said parts of the ratchet member in releasable engagement with said ratchet teeth, said detent member being flexibly movable transversely of the plane of said top wall and biased away from said wall for normally holding said detent element in engagement with said ratchet teeth for releasably securing said ratchet member in adjusted position longitudinally of said link.

8. In an extensible connector for bracelets, wrist watch straps, etc., a link, a ratchet member slidable in said link longitudinally thereof, said ratchet member being positioned at the inner surface of said link, and a detent member positioned at the outer surface of said link and secured thereto, said detent member being flexibly movable in a direction toward and away from said outer surface of said link and having a detent element releasably engageable with said ratchet member for releasably securing said ratchet member in adjusted position longitudinally of said link, said link having side portions extending beyond said outer surface thereof and overlying the adjacent side edges, respectively, of said detent member.

9. In an extensible connector for bracelets, wrist watch straps, etc., a link, a ratchet member slidable in said link longitudinally thereof, said ratchet member being positioned at the inner surface of said link, and a detent member positioned at the outer surface of said link and secured thereto, said detent member being flexibly movable in a direction toward and away from said outer surface of said link and having a detent element releasably engageable with said ratchet member for releasably securing said ratchet member in adjusted position longitudinally of said link, said link having side portions extending beyond said outer surface thereof and overlying the adjacent side edges, respectively, of said detent member, said side portions of the link extending substantially to the upper surface of said detent member whereby to prevent inadvertent ratchet-releasing movement of said detent member.

10. In an extensible connector for bracelets, wrist watch straps, etc., a channel shaped link having a top wall and side walls, a ratchet member mounted in said link between said sides and slidable longitudinally of said top wall at the inner surface thereof, and a detent member movably secured to said link at one end thereof and positioned over said top wall thereof, said detent member being flexibly movable toward and away from said top wall in the direction of the thickness of said wall, and having a detent element normally in releasable engagement with the ratchet of said ratchet member for releasably securing the latter in adjusted position longitudinally of said link, said link having side portions which overlie the side edges of said detent member, said link having side portions extending beyond said outer surface thereof and overlying the adjacent side edges, respectively, of said detent member, said side portions being of increasing depth toward the opposite end of the link.

SAMUEL LEVINE.

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