April 12, 1960 C. RESNICK 2,932,074

CONNECTOR

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Fig. 1.

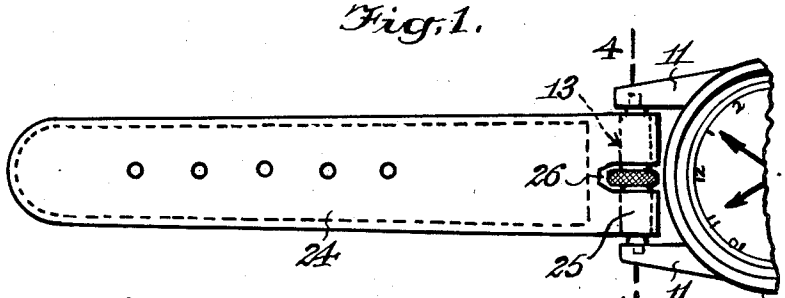


Fig. 2.

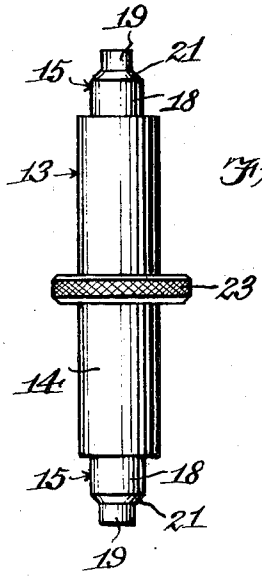


Fig. 3.

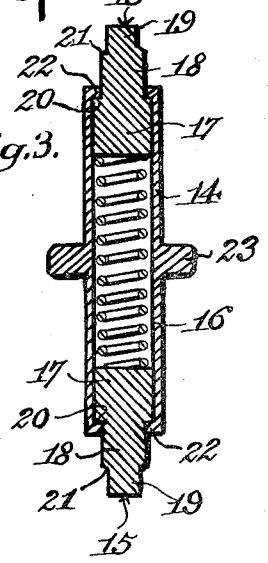
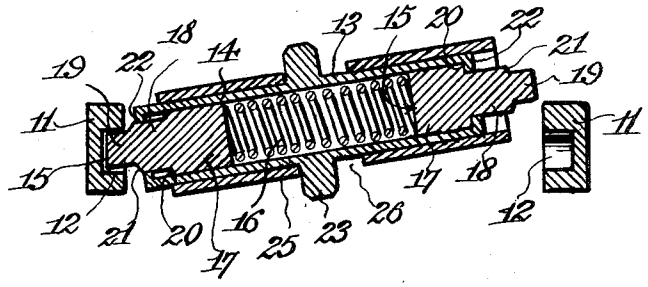


Fig. 4.



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CONNECTOR

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1 Claim. (Cl. 24—265)

This invention relates to a device for detachably connecting a strap or band to a wrist watch and any other article requiring a strap or band and adapted for the connection of the same thereto.

An object of the present invention is the provision of a device of the indicated character by which a strap or band may be quickly and easily connected with, and also be disconnected from an article, such as a wrist watch or other article having pairs of spaced lugs, and each pair of lugs having axially alined holes therein.

Another object of this invention is the provision of a strap and connector therefor which embody improvements in construction and operation enabling the strap to be conveniently connected with, and disconnected from, an article properly equipped, without the use of extra instrumentalities.

With the foregoing objects, other objects and advantages will appear when the following description is read in conjunction with the accompanying drawings, in which

Fig. 1 is a plan view showing a portion of a wrist watch, a strap and the connector of the present invention by which the strap is detachably connected with the watch.

Fig. 2 shows the connector of the present invention per se.

Fig. 3 is a central longitudinal sectional view of the connector.

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1 illustrating the manner in which the connector may be manipulated to connect the strap to the wrist watch or to disconnect the strap therefrom.

In Fig. 1 of the drawings there are shown portions of a wrist watch, namely, the case 10 and spaced lugs 11 on the case, selected to illustrate the present invention which is applied thereto by way of example. Each lug 11 has a hole 12 therein, the hole in one lug being in axial alinement with the hole in the other lug.

The connector 13 of the present invention, generally stated, comprises a barrel or tubular member 14, pins 15, and a helical compression spring 16. The tubular member 14 is shorter than the distance between the opposed faces with the holes 12 of the lugs 11. Each of the pins 15 is reduced at intervals to provide it with an end portion 17, an intermediate portion 18 smaller in diameter than the diameter of the end portion 17, and an end portion 19 smaller in diameter than the diameter of the intermediate portion 18. Such formation of each pin 15 provides it with axially spaced circular shoulders constituting stops 20 and 21 respectively.

The pins 15 are loosely arranged or telescoped in the opposite ends respectively of the tubular member 14. The large end portion 17 of each pin 15 is disposed wholly within the tubular member 14, the intermediate portion 18 projects from within the tubular member to the exterior thereof, and the end portion 19 is disposed wholly exteriorly of the tubular member in the normal projected or advanced connector retaining position of the pin.

Internal flanges 22 on the opposite ends respectively of tubular member 14 oppose the shoulders 20 of the respective pins 15. Thus the shoulders 20 and flanges 22 constitute coacting means which limit the outward axial movement of the pins 15 into their projected connector retaining position with respect to the tubular member 14. The shoulder 20 of each pin 15 and its coactive flange 22 also cause the movement of the pin with the tubular member 14 into a retracted releasing position in response to the appropriate axial movement of the tubular member when the aforesaid movement of one of the pins into its retracted releasing position is being effected while the other pin is held axially immovable.

The spring 16 is arranged within the tubular member 14 between the pins 15 in contact with the end portions 17 thereof, thereby yieldingly holding the pins 15 in their connector retaining position in cooperation with the shoulders 20 and the flanges 22.

In order to conveniently cause the axial movement of the tubular member 14 in one direction or the other opposite direction, the tubular member has a manipulator 23 formed integral therewith on the outside thereof in the nature of a ring.

The connector described hereinabove is employed with a strap or band 24 for the wrist watch in the instant case. The strap or band is usually of two parts, one of which has a buckle and the other part has a series of holes therein to singly receive the tongue of the buckle in a manner and for a purpose well known. Each part of the strap or band has a loop formed on one end. Only one part of the strap or band is shown, and the loop thereon is designated 25. The loop 25 has a notch 26 therein directed lengthwise of the strap or band part. The connector is engaged in the loop 25 by flexing it open to accommodate the ring 23 which is finally disposed in the notch 26 and projects outwardly through the latter. The connector extends through the loop disposed transversely with respect to the strap or band and its tubular member 14 is movable or slidable axially in the loop by means of the manipulator ring 23. The notch 26 is sufficiently wide to permit the necessary degree of axial movement of the tubular member 14 either to the right or left as viewed in Fig. 4.

The end portions 19 of the pins 15 are in axial alinement and are receivable in the holes 12 respectively. The diameter of the holes 12 is greater than the diameter of the end portions 19 so that the connector may be canted with respect to the lugs 11 when only one end portion 19 is engaged in one of the holes 12.

From the foregoing it will be understood that, when it is desired to connect a strap or band part to the wrist watch, the connector, as arranged in the loop 25, is canted with the strap or band part. Then one pin 15 has its end portion 19 inserted into the hole 12 in one of the lugs 11, the left hand lug in the instant case. Then the other pin 15 has its end portion 19 alined with the hole 12 in the other lug 11, after which the ring 23 is manipulated to the left, thereby causing axial movement of the tubular member 14 to the left and simultaneously returning the connector into parallelism with the axis extending through the holes 12. Then the end portion 19 of the left hand pin 15 is entered into the hole 12 of the adjacent lug. As the tubular member 14 is moved axially in the loop 25 to the left by means of the ring 23, the right hand pin 15 is brought into a retracted position with respect to the right hand lug 11 by means of the related coacting means 20 and 22. Upon withdrawal of pressure on the ring 23, the spring 16 under tension forces the right hand pin end portion 19 into the hole 12 of the right hand lug 11. The shoulders 21 contacting the respective lugs 11 limit the degree of insertion of the pins 15 into the holes 12 and assure the centering of the tubu-

lar member 14 and its ring 23 with respect to the strap and band and the pins 15.

By repeating the above described manipulation of the tubular member 14 by means of the ring 23, the right hand pin 15 may be withdrawn from its hole 12, whereupon the connector is canted and the left hand pin 15 is removed from its hole 12, thereby disconnecting or detaching the strap or band from the wrist watch. It is to be understand that when the right hand pin 15 is being drawn from its hole 12 that the left hand pin 15 is held axially immovable by its shoulder 21 in contact with the left hand lug 11, and vice versa. Also, either the left hand pin 15 or the right hand pin 15 may be engaged in the hole 12 of the intended lug 11 in effecting the connection of the strap or band. Therefore the present connector is adapted for a two-way operation. One of the pins may be integral with the tubular member 14 in which case the connector will be adapted for one-way operation.

I claim:

The combination of a strap having a folded, bifurcated end constituting two aligned spaced loops each of which has two open ends; a manually operable connector structure extending through the said aligned loops, said connector structure comprising a tubular barrel member having open ends; a pair of plunger pins longitudinally slidable in said barrel member and projecting from the opposite ends thereof; spring means in said barrel member, yieldably holding said pins in projecting positions in the barrel member, each of said pins being retractable

to a position fully retracted in the member, against the action of said spring means; cooperable means on the pins and barrel member, limiting the projection of the pins from the member; and a rigid handle means comprising an annular knurled flange fixedly disposed on the barrel member intermediate the ends of the latter and extending past and projecting beyond the outer surfaces of the aligned loops of the strap, for shifting the barrel member and pins as a unit longitudinally in the loops, thereby to effect a projection of one of the pins from one loop and a retraction of the other pin with respect to the other loop for the purpose of engaging the connector with and disengaging it from spaced bearings arranged to receive the said pins and to accommodate between them the said barrel member, the spacing between the loops being substantially greater than the thickness of the said knurled flange, thereby to enable the connector to have an appreciable longitudinal movement in the said loops.

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