Oct. 20, 1964 A. CHISHOLM 3,153,333

BAND TIGHTENED BY SPRING-URGED GEAR MEANS

Filed Feb. 11, 1963

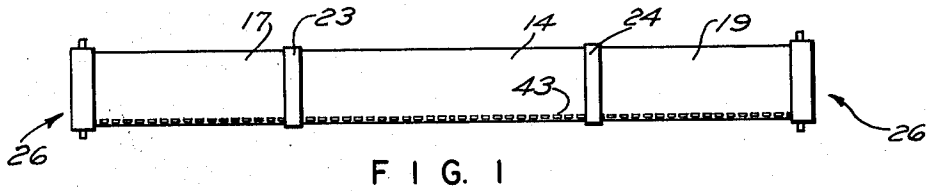



FIG. 1

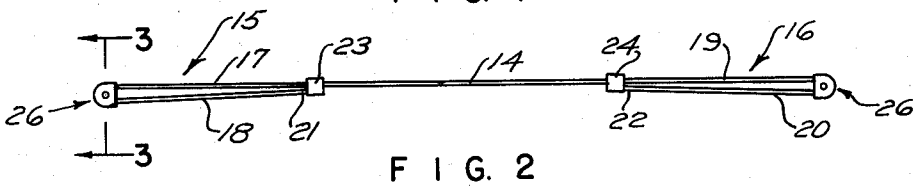



FIG. 2

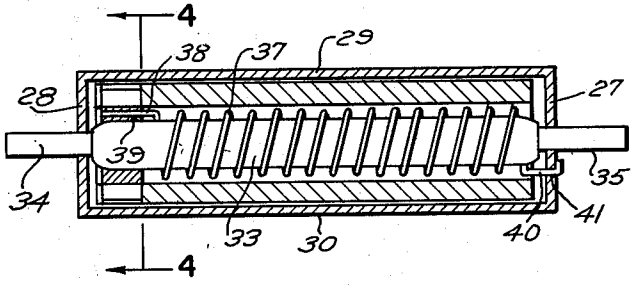



FIG. 3

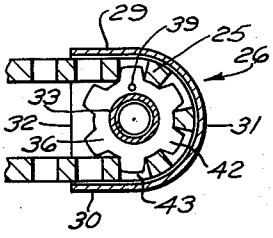



FIG. 4

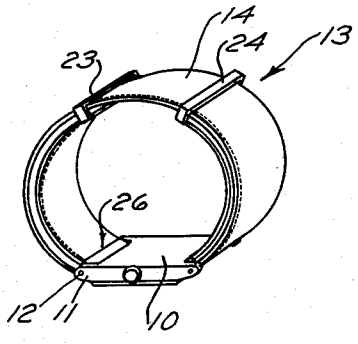



FIG. 5

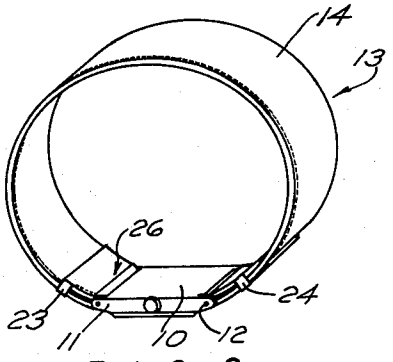



FIG. 6

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# BAND TIGHTENED BY SPRING-URGED GEAR MEANS

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3 Claims. (Cl. 63—5)

This invention relates to a bracelet of the type which may be used for securing a watch upon the wrist of the wearer.

Bracelets having some sort of expansion action have been utilized for contracting about the wrist of the wearer. Usually the contraction is secured through the use of lazy tong links, there being contraction of the braclet by spring action within the links themselves.

One of the objects of this invention is to provide a ribbon-like member which may extend partially about the wrist of the wearer and be attached to a watch or some object to hold the same in position with an arrangement cooperating with the ribbon for reeling it in such a way as to cause a shortening of the length of the bracelet and thus a tightening of the bracelet on the wrist.

Another object of the invention is to provide a self-tightening arrangement which will be flat and smooth in its portions which engage the wrist and thus one which is comfortable for wear.

Another object of the invention is to provide a very thin bracelet about the wrist with its self-tightening mechanism located adjacent the ends which are attached to a watch or the like and thus at the location where a thickening of the encircling part occurs.

Another object of the invention is to provide a self-tightening mechanism which will be substantially entirely concealed and thus one which may be neat and of pleasing appearance when worn.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

FIG. 1 is a top plan view of the expansion bracelet detached from the watch;

FIG. 2 is a side elevation thereof;

FIG. 3 is a sectional view on substantially line 3—3 of FIG. 2;

FIG. 4 is a sectional on substantially line 4—4 of FIG. 3;

FIG. 5 is a perspective view of the bracelet attached to a watch with the bracelet in contracted position; and

FIG. 6 is a view similar to FIG. 5 but with the bracelet in expanded position.

In proceeding with this invention, I use a ribbon bracelet of metal, plastic or some suitable material and double back the ribbon bracelet upon itself. In the bight of the doubled back portion I mount a gear which is held under spring tension and which gear will have its teeth extending into openings in the ribbon. Thus the tension on the gear tends to rotate the gear and move the ribbon in a direction to increase the overlapping of the doubled back portion and thus contract its length.

With reference to the drawings, 10 designates a watch (shown purely by way of example) having lugs 11 with openings 12 therein for the reception of spring pins for attaching a bracelet to the watch. The bracelet which is utilized for this attachment is designated generally 13 and as shown in FIGS. 1 and 2 comprises an intermediate portion 14 with doubled back end portions 15 and 16, the end portion 15 comprising an upper part of the ribbon 17 with a lower part 18 extending beneath it. Similarly, the end portion 16 comprises the upper part 19 with a lower part 20 extending beneath it. These lower parts 18 and 20 have their ends 21 and 22 connected to slides 23 and 24 which slides embrace or are loosely looped around the intermediate portions 14 or upper parts 17 and 19 of the ribbon.



These doubled back portions form a bight 25 located within a casing 26. This casing 26 has opposite end walls 27 and 28 connected by a top wall 29 and a bottom wall 30 with a curved side wall 31 joining the top and bottom walls and leaving an open side 32. A tubular pin 33 has an internal spring urging outwardly the trunnions 34 and 35 into bearings opening in the end walls 27 and 28 of the casing. These trunnions may be pressed inwardly for insertion in the holes 12 of the lugs 11 of the watch or the like but also serve to retain the tubular pin 33 in the casing.

At least one gear 36 is rotatably mounted upon the pin 33 and a torsion spring 37 encircles the pin 33 and has one end 38 extending into the opening 39 in the gear, while the other end 40 extends through opening 41 in the opposite end wall 27 of the casing. The gear means has its teeth 42 extending into openings 43 which are evenly spaced lengthwise along at least one edge of the ribbon portions 14, 17, 19. The direction of winding of the torsion spring 37 is such that it will be under some tension although nearly relaxed when the bracelet is in its most contracting position such as indicated in FIG. 5. However, when the bracelet is expanded to a size sufficient to fit over the hand of the user to be placed on the wrist, the slides 23 and 24 will move along the ribbon, and as they do, the gear means will be rotated so as to place the torsion spring under tension. The bracelet being held in this expanded position is passed over the hand and is positioned on the wrist and released. The tension placed in the spring will cause the gear means to rotate at either end of the bracelet, or at least at one end if the bracelet is equipped with this device at only one end, and thus cause the bracelet to be self-tightening upon the wrist of the wearer.

I claim:

1. An attaching member comprising a ribbon doubled upon itself to form a bight with its doubled portions relatively slidable, said bight having perforations spaced evenly lengthwise of the ribbon, a gear within the bight having teeth entering some of said perforations, first means rotatably mounting the gear and retaining said teeth in their perforations, said first means comprising a casing embracing the bight and second means including a torsion spring connected to said gear and casing, said second means tending to rotate said gear in one direction and slide said doubled portions one on the other.

2. An expansion bracelet comprising a casing having an open side, a gear rotatable within said casing, a torsion spring connected at one end to the casing and at the other end to said gear and under tension tending to rotate said gear relative to the casing in one direction and a ribbon having a series of perforations spaced lengthwise of the ribbon with portions of the ribbon, including some of said perforations, entering and leaving said cas-

ing through the open side thereof and extending about said gear, means maintaining teeth on said gear in perforations of said series, said entering and leaving ribbon portions being slidably connected to each other.

3. An expansion bracelet as in claim 2 wherein said casing has opposite end walls, a pin is supported in said end walls and is coaxial with the axis of said gear and said torsion spring embraces said pin.



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