

UNITED STATES PATENT OFFICE.

ADOLPH SIMON, OF LONDON, ENGLAND.

WATCH AND OTHER BRACELET.

1,313,644.

Specification of Letters Patent.

Patented Aug. 19, 1919.

Application filed March 27, 1918. Serial No. 224,993.

To all whom it may concern:

Be it known that I, ADOLPH SIMON, a subject of the King of England, residing in London, England, have invented certain new and useful Improvements in Watch and other Bracelets, of which the following is a specification.

This invention is for improvements in or relating to watch and other bracelets of the type wherein the slack of the bracelet is wound up on a suitably mounted roller which constitutes a slack-absorber and in some cases is spring-controlled. In some bracelets of this type as heretofore constructed, the bracelet-band has been divided and the ends have been operatively connected by thin flexible cords or chains to a roller, thus interrupting the continuity of the wrist-encircling portion of the bracelet. This roller was placed with its axis of rotation perpendicular to the axis of the wearer's wrist, that is, in such way as to project away from the wrist of the wearer and the flexible end pieces entered the casing at points approximately opposite each other. It has also been proposed to form the slack-absorber as a roller inclosed in a casing which constitutes a pendent to a divided bracelet. In this case the ends of the chains, bands or cords proposed to be used are secured to the slack-absorber at points close to each other, one being fastened to the casing and the other passing through an orifice in the casing close to this fastening and being attached to the roller within the casing. Whatever form of connection between the bracelet and slack-absorber was employed in this last construction, the arrangement proposed was such that the slack-absorber would be pendent from the bracelet and could not lie snugly against the wrist.

According to the invention, a slack-absorber for an expansible watch or other bracelet has a frame open on one side to admit a flat flexible wrist-encircling band (for example of silk ribbon) the other side of the said frame being also arranged for operative connection with the wrist-encircling band, a small roller rotatably mounted in the frame and so disposed relatively to the open side thereof that its axis of rotation shall lie parallel with the face of the said wrist-encircling band when admitted

by such open side but transverse to the longitudinal direction of the same, the frame being provided with guiding means to guide the band in at the open side and present it to the roller in such manner that it can wind evenly thereon in superposed layers, the arrangement of the parts being such that the frame is held by the band in fixed lateral relation thereto and the roller is made to lie snugly against the wrist of the wearer, and means for rotating the roller to absorb the slack of the wrist-encircling band.

The invention further relates to an expansible watch or other bracelet having a flat flexible wrist-encircling band provided with a slack-absorber in the manner stated above.

If desired, the roller may be tubular and have a spiral spring situated within it, the said spring being connected operatively to it at one end and to a part stationary with the roller-carrier at the other end, so that when the band is partly run off the roller, the spring is loaded by the rotation of the roller and thus causes the roller to take up the slack directly the tension on the band is released.

Instead of the spring within the roller, the roller may be provided with one or more barrels secured to the carrier or the roller, each containing a flat spiral spring for returning the roller after it has been rotated in one direction by the drawing off of the band.

In the accompanying drawings which illustrate one method of carrying out this invention:—

Figure 1 is a perspective view of a bracelet with the slack-absorber in place;

Fig. 2 is a perspective view of the slack-absorber on a larger scale than Fig. 1 and with the bracelet-band removed;

Fig. 3 shows the roller separated from the rest of the device;

Fig. 4 is an end view of the slack-absorber with the covering-plate detached;

Fig. 5 is a diagram showing the method of winding the band upon the roller;

Fig. 6 is a plan of a modified form of slack-absorber according to this invention;

Fig. 7 is a perspective view of the slack-absorber shown in Fig. 6 with the parts partially detached;

Fig. 8 is a diagrammatic view of yet another form of slack-absorber according to the present invention.

The same letters indicate the same parts throughout the drawings.

The bracelet-band A is preferably of silk ribbon though it may be of any material which allows of sufficient flexibility and can be made in the form of a flat band.

The slack-absorber comprises a roller B which is slotted at B¹ and is reduced at B² to enter bearing-plates C of a carrier. The plates are held together by bars C¹ which provide a slot C² between them on each side in line with the slot B¹, and each plate is recessed from the outer side as shown at C³, Fig. 4, to receive a flat spiral spring D, one in each recess. The recesses thus provide barrels for the springs and cover-plates E are secured one over each recess, each cover-plate conveniently having an orifice E¹ at the center to receive the still further reduced end B³ of the roller B.

The roller is provided with hooks B^{2*} on the parts B² which engage the centers of the springs D and the outer ends of the springs are engaged with the barrel.

To place the band A in position, it is threaded in a straight line through the slot C² on one side of the carrier, then through the slot B¹ of the roller B, and then out through the other slot C² of the carrier. The ends of the bands are secured to the watch in any known manner as shown in Fig. 1, and the slack-absorber is situated in a central position of the band opposite the watch. Before threading the band through the slack-absorber, the roller is turned around against the action of its springs to set these up the required amount so that when the band is threaded through and brought to the proper position and the roller is released, the latter immediately releases the central portion of the band on to it in a double thickness, as shown in Fig. 5. It follows therefore that if the band is pulled upon on opposite sides of the carrier as when expanding it to pass it over the hand, that portion which is wound upon the roller is pulled off and the roller is thereby rotated against the action of its springs, but as soon as the band is again relieved of tension, the springs cause the roller to turn and draw up the slack, with the result that the bracelet always fits the arm of the wearer and yet can be easily passed over the hand.

An important feature of this invention is the direct engagement of a flat flexible bracelet-band with the roller and the placing of the roller transverse to the longitudinal direction of the band but parallel to the face of it, so that the band can roll direct on to it without difficulty and the whole device can lie close to the arm of the wearer.

In another form of slack-absorber, the

carrier G, Fig. 6, is rectangular and curved to the arm, the roller H being mounted to lie across the carrier at a point midway along its length. The carrier is provided with jaws G¹ on its under-side to receive the ends of a fixed pin or spindle H¹. Free to rotate on this spindle is the roller H which is tubular and has one end permanently closed but receives at the other end a detachable plug H². The plug is grooved at H³ so that a flange H⁴ is formed which is slotted at H⁵. Within the barrel a spiral cylindrical spring J is mounted. One end of this spring enters a hole in the fixed spindle H¹ and the other end is hooked to lie in the slot H⁵ in the flange H⁴, its free end lying in the groove H³. The parts can be put together as shown in Fig. 7. One end of the spindle H¹ is fixed in its jaw by a pin G² which passes through the elements of the jaw and the pin, the spring is hooked on to the spindle before this is introduced into the barrel and then the other end of the spring is hooked on to the plug H². The plug has a peripheral pin H⁶ which engages a bayonet-slot H⁷ in the end of the barrel H and thus by pushing the plug home this pin can be brought around to the end of the bayonet-slot and the plug is thus prevented from endwise displacement; the tension of the spring in use is in such direction as to keep the pin H⁶ at the end of the bayonet-slot H⁷. When the plug is in place, the barrel can be swung down so that the free end of the spindle H¹ enters the other jaw G¹ and it can then be pinned in place in the same manner as the end which is shown already secured.

On the under-side of the carrier G are loops G³ for the band which serve to guide it on to and off the roller, and the roller itself has a loop H⁸ on it so that the band can be passed through this loop to engage it with the roller.

This form of slack-absorber is easy to manufacture and can be readily dismantled for inspection or repair and the parts are easily re-assembled.

Another form of spring-control for the roller is shown in Fig. 8, where the roller K is mounted at the meeting ends of two semi-circular tubular guides K¹, K². In the guide K¹ two spiral springs K³ are mounted. Through each spring a thin cord K⁴ extends. One end of the cord is attached to the roller and the other end is attached to the far end of the spring. It thus follows that when the roller is rotated in one direction, it winds the cords K⁴ upon it and thus puts the springs K³ in compression so that they will return it when it is freed. Similar springs K³ could be mounted in the tubular guide K², or only one tubular guide may be employed, but in the drawing a single spiral spring K⁵ is shown whose ends

are connected by cords K^6 to the roller. With this form of device the cords operate to extend the spring K^5 when they are wound up upon the roller and the spring
 5 draws them in to return the roller. Obviously two springs could be used instead of one, each controlling a cord secured to the end of it. The attachment of the ribbon or
 10 other band to the roller may be the same as that described with reference to the roller B shown in Figs. 2 and 3.

For convenience, the band is brought out at each side of the carrier between two guide-pins or guide-bars as shown in the
 15 drawings, but it is particularly desirable to have a guide-pin situated on the outer side of the outer coil of ribbon where it leaves the roller and one on the inner side of the inner coil where it leaves the roller, as will be
 20 readily seen from an inspection of Fig. 5.

As will be observed, the roller requires to turn about three times to take up sufficient slack for practicable purposes and instead
 25 of connecting springs such as C^3 , Fig. 4, direct to the roller it may be preferred in some cases to connect them to arbors which are geared to the roller in such way as to

decrease the degree of movement necessary for the springs, thus with a 2:1 reduction gear from the roller, the arbors of the springs
 30 would only have to do $1\frac{1}{2}$ turns instead of 3.

What I claim as my invention and desire to secure by Letters Patent is:—

An expansible and contractile bracelet for a wrist watch, comprising a thin substantially flat wrist-encircling band of flexible
 35 material that will snugly conform to the wrist of the wearer, with means for connecting the ends of the same to opposite sides of a watch, a frame having opposite guides
 40 through which the band slidably passes and from which it is freely removable when detached from a watch, a roller journaled in the frame between the guides and engaged
 45 with the band to cause the latter to wrap thereon, said roller extending parallel to the flat sides of the band and transversely of said band, and spring means engaged
 50 with the roller and the frame to rotate the roller and cause the band to wrap thereon to take up the slack of said band when applied to the wrist of the wearer.

In testimony whereof I affix my signature.
 ADOLPH SIMON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."