United States Patent

Kalinsky

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[54] **WRIST BAND AND BUCKLE THEREFOR**

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[52] **U.S. Cl.** ..... **24/71 J,** 224/4 D

[51] **Int. Cl.** **A44c 5/24**

[58] **Field of Search** .....224/4 D, 4 E, 28 W, 28 R; 24/68 J, 69 J, 71 J, 265 WS, 70 J, 70 TT, 68 T, 68 R, 70 R, 70 ST; 63/3, 5

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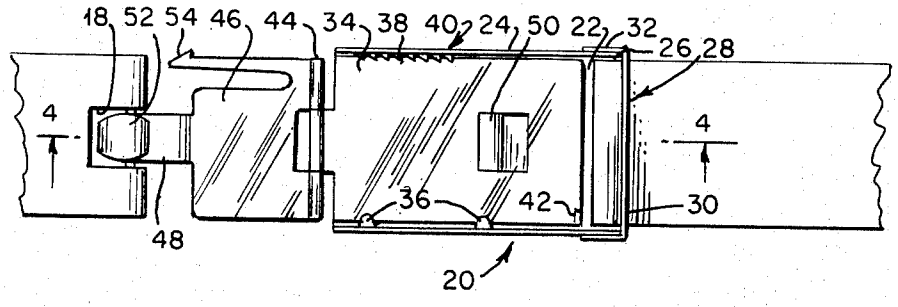
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Assistant Examiner—Jerold M. Forsberg
Attorney—Victor M. Helfand

[57] **ABSTRACT**

A wrist band buckle having a trough-shaped casing which is securable by one open end to an end of a wrist band and has a cover hinged thereto at said end. A ratchet is formed in a side of the casing and a pair of plates hingedly interengaged at one end are slidably supported within the casing for limited movement into and out of its other end, with the hinged ends of the plates facing said other end. The upper of the plates has a hook at its free end for engaging an opening in the other end of the wrist band and is releasably engaged by said free end on the lower plate. The upper of the plates also has a resiliently connected pawl engagable on the ratchet and disengagable therefrom upon the lifting and disengagement of the hook-end of the upper plate from the lower plate.

8 Claims, 7 Drawing Figures



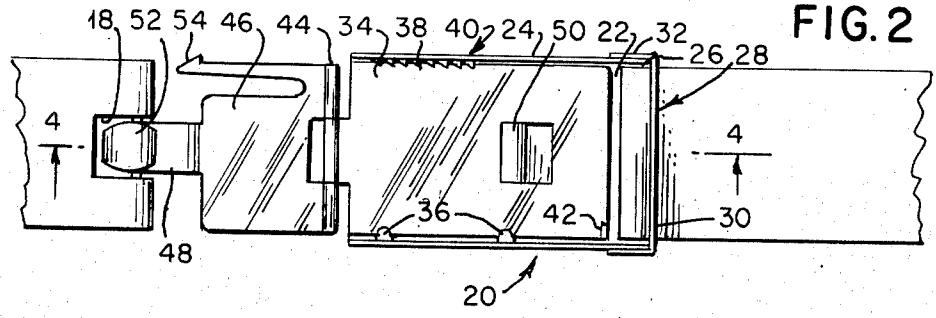


FIG. 2

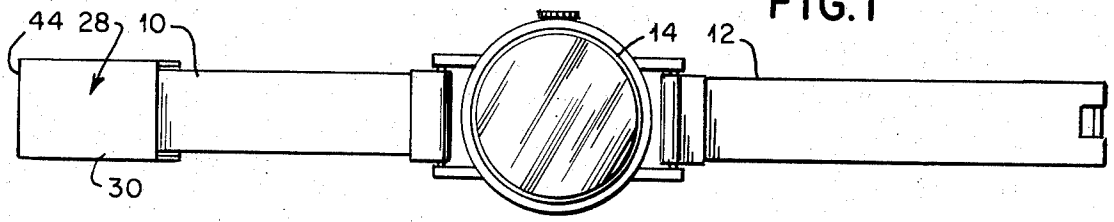


FIG. 1

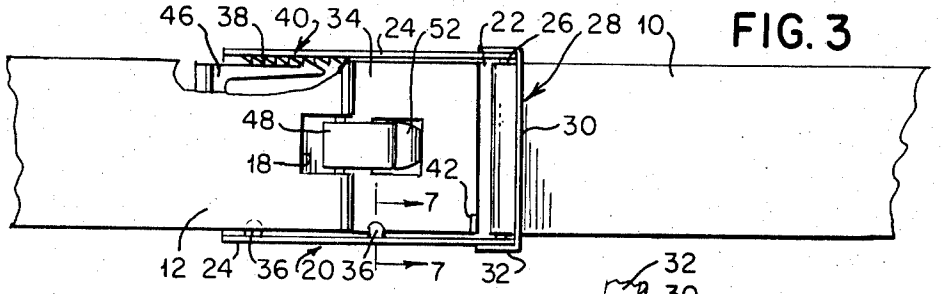


FIG. 3

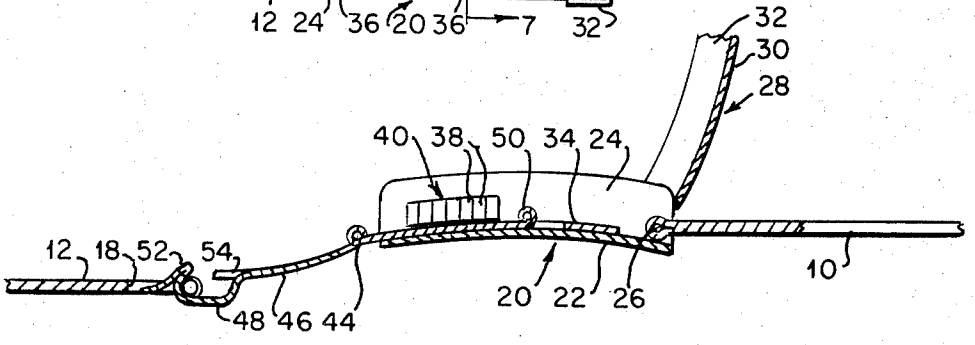


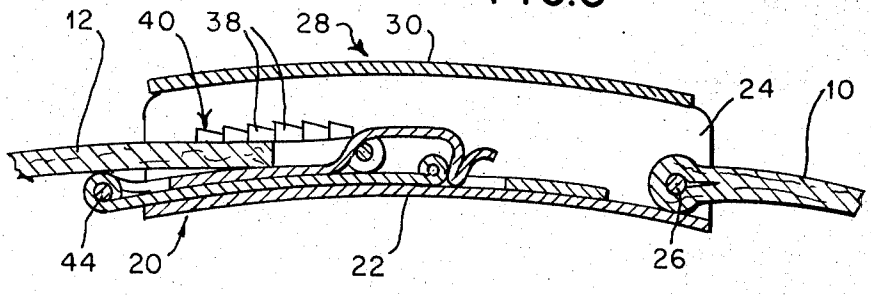
FIG. 4

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FIG.5



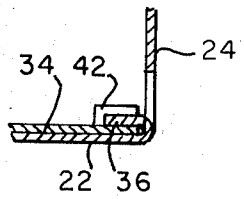


FIG.7

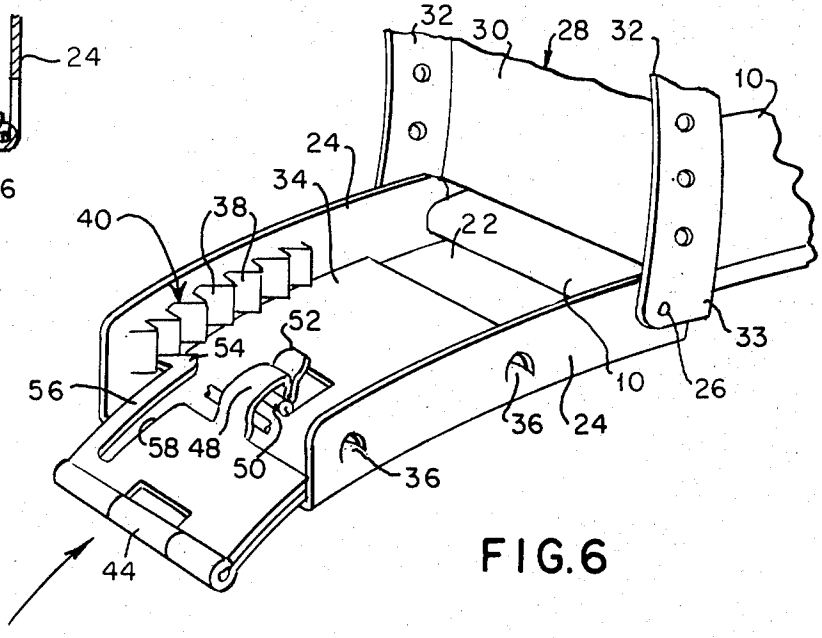


FIG.6

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WRIST BAND AND BUCKLE THEREFOR

The present invention relates to a wrist band, such as a wrist watch band, and to the buckle therefor. More particularly, the invention relates to a wrist band whose free ends are separably connected by a buckle which is adjustable to variations in the thickness of the wearer's wrist.

Wrist bands, such as wrist watch bands, even when initially fitted for the wearer's wrist, frequently become uncomfortable to wear because of the change in thickness of the wearer's wrist due to body or environmental changes, as changes in temperature, for instance. Such changes cause the wrist to temporarily swell or contract under the increase or decrease in temperature while the band is worn on the wrist to become too tight or too loose.

Various means have heretofore been provided in connection with wrist bands to compensate for such temporary variations in wrist thickness. One such means consists of permanently connecting the ends of the band or band sections by an integrally formed clasp permanently secured to its ends, or end sections, and which includes a pair of adjustably telescoping elements. Such clasp form presents a number of shortcomings. One shortcoming is that, because of the integral construction of the clasp and its permanent connection to the ends of the band or band sections, it forms a continuous, endless band which is very often difficult and clumsy to slip over the wearer's hand for either putting on or removal. Another disadvantage, due to the same cause, is that the band cannot be laid out flat, for full display thereof and of any watch to which it may be connected. Such clasp-connected band and watch must be displayed in a circular form, generally mounted around a turret-like structure formed in a packaging box or case, which renders such packaging box or case relatively expensive to produce and bulky. Such display conceals much of the band and buckle and does not lend itself to a variety of displays by the vendors of watches and bands.

Where adjustable buckles have been used with wrist bands, they have been of two piece construction, each attached to one end of the band, and required that the buckle had to be opened, both, for lengthening and for shortening of the band. Further, such buckles were generally incapable of fine adjustment.

Both of the above means, the clasps and the buckles of the prior art had further, common shortcomings in having the outer portion of the adjustable element or member exposed to view in substantially all instances where the band was lengthened from its minimum length, to thereby detract from its symmetry and from its attractiveness.

Accordingly, the present invention contemplates the provision of a wrist band having an adjustable buckle in which all of the foregoing shortcomings are substantially eliminated.

Thus, the present invention is directed to the provision of a wrist band of the character described having ends that are interconnected by a buckle of unitary structure secured to one of its ends and which may, therefore, be conveniently and comfortably closed around the wrist and conveniently opened for removal therefrom, and which may, in its open state, be fully and attractively displayed in flat form, with any wrist watch to which it may be connected, for full view, in relatively simple, compact and economical packages.

It is also an object of the invention to provide a wrist band of the character described having a buckle formed with an integrally connected adjustable element which is completely concealed in all of its adjusted positions to thereby afford the band a symmetrical, neat and attractive appearance at all times.

It is another object of the present invention to provide a wrist band of the character described having a buckle capable of fine adjustment for enlarging or shortening the band.

It is still another object of present invention to provide a wrist band of the character described having a buckle secured to one of its free ends that need not be opened to release the end separately attached thereto for purposes of adjustment to tighten the band around the wrist.

It is a further object of the present invention to provide a wrist band of the character described having a buckle secured to one of its ends to and from which the other end may be relatively easily and conveniently attached and released.

It is a still further object of the present invention to provide a wrist band of the character described having a buckle which is simple, easy and convenient to use and wear; which is simple and easy to open and close; which is of relatively simple and compact construction; which is of neat and attractive appearance; and which is relatively economical to produce.

It is a still further object of the present invention to provide a wrist band, of the character described, having a buckle which provides increased safety against disengagement of the band from the wrist and its resultant loss.

The foregoing and other object and advantages of the wrist band of the present invention and of the buckle therefor will become more readily apparent to those skilled in the art from the embodiments thereof shown in the accompanying drawings and from the description following. It is to be understood, however, that such embodiment is shown by way of illustration only, to make the principles and practice of the invention more readily comprehensible, and without any intent of limiting the invention to the specific details therein shown.

In the drawings:

FIG. 1 is a top plan view of a wrist watch band having a buckle of the present invention, showing the band in fully extended position, with the buckle connected to one end thereof;

FIG. 2 is a fragmentary enlarged view of the band of FIG. 1, showing the other end of the band in a first stage of engagement with the buckle;

FIG. 3 is a view similar to that of FIG. 2 showing a second stage in the engagement of the free band end with the buckle;

FIG. 4 is a section taken on line 4—4 of FIG. 2;

FIG. 5 is a longitudinal section taken through the fully connected band and buckle;

FIG. 6 is a fragmentary perspective view of the opened buckle, showing it in extended position; and

FIG. 7 is a fragmentary sectional view showing one form of means for limiting the telescoping movement of the buckle sections.

Generally stated, the invention contemplates the provision, with a wrist band, of a buckle having an outer casing secured by one end to one end of the wrist band, in which is held a telescopically movable plate which is provided with a hinged, outwardly swingable member at its outer end. The hinged member is provided with a hook at its free end over which the other free end of the band is engageable and which, when it is swung inwardly over the connected telescoping plate, is engaged thereon; the hinged member being thereby covered by the end portion of the band connected thereto; such band end being, in turn, covered by a casing cover. The casing and plate are provided with gratuated interengaging means whereby the inward position of the plate within the casing may be adjusted while the band is worn on the wrist. Also, the outward position of the plate may be adjusted without the disengagement of the band end from its hinged member.

Referring more specifically to the embodiment of the invention illustrated in the drawings, the same is shown in connection with a wrist watch band which comprises a pair of band section, **10** and **12**, each secured by one end to the spindle of a watch case, **14**, in the conventional manner. A buckle is connected to the other end of one of the band sections, as **10**, and the other band section is provided with an opening, **18**, at its free end which may be formed in any desired manner.

The buckle comprises an outer casing, generally designated as **20**, including a preferably longitudinally arcuate base plate **22** having upstanding sides **24** along its longitudinal edges. The sides **24** support at one end a spindle, **26**, which projects outwardly from the sides, **24**. The portion of spindle, **26**, between sides **24** engages an end of band section, **10**, in the conventional manner. The projecting ends of the spindle, **26**, hingably support a cover, generally designated as **28**, consisting of a top wall, **30**, and depending sides, **32**, which are provided with end extension, **33**, formed with openings by which they are engaged over the spindle projections.

Slidably supported on base, **22**, is a plate, **34**, which is held in place over base, **22**, along one longitudinal edge, by lugs, **36**, struck out from one of the sides **24** and overlie such edge and, on its other edge, by the lower edges by lugs, **38**, vertically struck-out from the other side **24** which extend in a diagonally inward direction, and are regularly and closely spaced to form the teeth of a ratchet, generally designated as **40**.

Plate, **34**, is provided at its inner end, which is the end adjacent the spindle **26**, with an upstanding lug, **42**, that engages against the innermost of the struck-out lugs **36** and limits the outward movement of plate, **34**, from casing, **20**.

The opposed end edge of plate, **34**, has hinged thereto, as at **44**, in any suitable desired manner, a second shorter plate, **46**, which may be formed of inherently resilient material, as spring steel, and which is provided at its free end with a relatively narrow hook, **48**, which is upwardly curved when plate **46** is folded over plate **34**, and is adapted to be engaged in the opening, **18**, at the free end of the other band section, **12**. Plate **34** is provided with an upwardly struck-out detent lug, **50**, in its inner portion, over which the preferably inwardly curving nose, **52**, of the hook, **48**, may be engaged, so that plates, **34** and **46** may be moved as a unit.

Hinged plate **46** is provided with a pawl, **54**, along its edge adjacent to ratchet **40**, at the end of an inwardly extending resilient arm **56** positioned to press the pawl against the ratchet **40** and permit it to slide over the teeth of the ratchet when interengaged plate **34** and **46** are moved inwardly and will engage against the teeth to prevent outward movement of such plates from casing **20**. Preferably, pawl **54** and arm **56** may be formed integrally with hinged plate **46** and separated from the remainder of the plate by slot, **58**, extending inwardly into hinged plate **46** from its outer edge and terminating short of its hinged end.

The buckle of the invention may be used as follows:

Initially, from the flat extended position of a band having a buckle of the invention attached to the end of its section **10**, with the buckle closed, in order to secure the band around a wrist, cover **28** is opened, hinged plate **46** has its nose **52** detached from detent **50** and is swung outwardly, thus disengaging pawl **54** from ratchet **40** and plate **34** is then moved outwardly of casing **20**. In this position, the hook **48** is disposed with its opening outwardly facing (FIGS. **2** and **4**). The end of the other band section **12** is then engaged by its opening **18** over hook **48** and hinged plate **46** is then folded inwardly over plate **34** and nose **52** of the hook reengaged over the detent **50**. In this position, the end of band section **12** covers the hinged plate **46**. Cover **28** is then folded over outer casing **20** to thereby cover the entire structure, including the engaged end of band section **12** and its opening **18**, to provide a clean and neat appearance to the band connection. The band may then be adjusted, if necessary, to wrist thickness, by pushing against the end of plate **34** to move it and the pawl **50** inwardly into the outer casing **20**. The inward bias of the ratchet teeth engaging the pawl **50** to maintain it in fixed position.

Should the band at any time thereafter become uncomfortable because of wrist expansion, cover **28** may be lifted, the nose **52** disengaged from detent **50**, and hinged plate **34** and its associated pawl **54** disengaged from the ratchet **40**, and plate **34** moved outwardly to enlarge the wrist band to a comfortable size. Hinged plate **46** may then be folded back into place and engaged on plate **34** and its pawl **54** reengaged on ratchet **40** and the cover **20** reclosed. It will be clear, that this readjustment for enlargement in size may be accomplished by merely opening the cover of the buckle and slightly raising the inner end of the hinged plate **46**, sufficient to disengage pawl **54** from ratchet **40**, without any need for disengaging the end of band section **12** from the buckle.

It will be noted that the buckle of the present invention provides increased safety against disengagement of the free end of band section **12** therefrom, thus reducing the chances of losing the band. Such protection is first afforded by the cover **28** when in closed position. Should a cover be inadvertently opened, protection against disengagement is provided by the engagement of the nose **52** of hook **48** over the detent **50**. Should the hook become disengaged and plate **46** moved out of the casing, the end of band section **12** will still be held in the inwardly curving nose **52** of the hook.

It may here be stated that while the buckle of the present invention has been illustrated in connection with a wrist watch band, formed of fabric or leather material, it will be readily understood that it may be

used with any other type of band, including metallic link bands, and the like.

This completes the description of the buckle of the present invention, the band with which it is used and the manner of its use. It will be readily apparent that the buckle of the present invention is of relatively simple construction and easy to operate; that it permits the band to which it is attached to be fully displayed in flat position; that it presents, when attached to the band, and closed, and neat and clean appearance with the adjustment mechanism entirely concealed; that it may be adjusted to reduce the size of the band without being opened at all; and that it may be adjusted to enlarge the size of the band without detachment of the band therefrom.

It will also be apparent that numerous variations and modifications may be made in the buckle and wrist band of the present invention, by anyone skilled in the art, in accordance with the principles of the invention hereinabove set forth, and without the exercise of any inventive ingenuity.

I claim:

1. A wrist band comprising, the combination with a band of a buckle, said buckle including an open-ended casing having a bottom and upright side walls, means at one open end of said casing securing an end of said band thereto, a pair of plates hingedly interengaged at one end disposed in said casing with their hinged ends facing the other open end thereof, one of said plates resting on said casing bottom means engaging said one plate on said casing bottom for limited sliding movement thereover in and out of said casing through said other end, a ratchet on the inner face of one of said sides of said casing, said ratchet having teeth slanting in the direction of said first end of said casing, the other of said interhinged plates having a hook at its free end, means releasably interengaging said other plate with said first plate when in superposed position and a pawl connected to said first plate engageable on said ratchet, said band having an opening at its other end engageable on said hook when said other plate is in extended position relative said first plate.

2. The wrist band of claim 1, wherein a cover is provided for said casing said cover including a top wall and depending side walls adapted to overlap the side walls of said casing and means pivotally supporting said cover by one end on said one end of said casing.

3. The wrist band of claim 2, wherein said means securing said end of the wrist band on said casing and the means for supporting said cover comprises a spindle supported in the side walls of said casing and projecting outwardly therefrom, said band end secured on said spindle between said side walls and the side walls of said covers having extensions at one end formed with openings fitted over the projecting ends of said spindle.

4. The wrist band of claim 1, wherein the teeth of said ratchet comprise lugs struck-out inwardly from one of said side walls of said casing.

5. The wrist band of claim 4, wherein said struck-out lugs overlie an edge of said one plate and spaced lugs struck-out from the other of said side walls of said casing overlie the opposed edge of said one plate, said one plate having an upstanding lug at its inner end engageable against the innermost of said struck-out lugs of said other wall to limit the outward movement of said one plate from said casing.

6. The wrist band of claim 1, wherein said second plate is formed of inherently resilient material and said hook is integral therewith and extends from the free end thereof, and wherein said means interengaging said second plate with said first plate comprises an upwardly struck-out detent lug on said first plate and an inwardly curved nose on the end of said hook adapted to snap over said detent lug when said second plate is pressed against said first plate.

7. The wrist band of claim 1, wherein said pawl is connected to said plate by a resilient arm.

8. The wrist band of claim 7, wherein said second plate is formed of inherently resilient material and said pawl and said arm are integrally formed with said plate and separated therefrom by a slot formed in said plate extending inwardly from the edge of its free end.

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