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(54) **Adjustable belt**

(57) This document discloses a device to adjust the size of straps or belts whatever their form and size of all the components. This specification details a device which, once installed in the belt, permanently blocks any possible rotation movement of the belt-strap of the belt with respect to the buckle or pins, therefore avoiding un-

desired effects and deformations in the belt-strap by a special plate concealed inside the leather and a specially designed screw to be able to fix it both manually (to avoid possible accidents with tools) or with the use of a screw-driver.

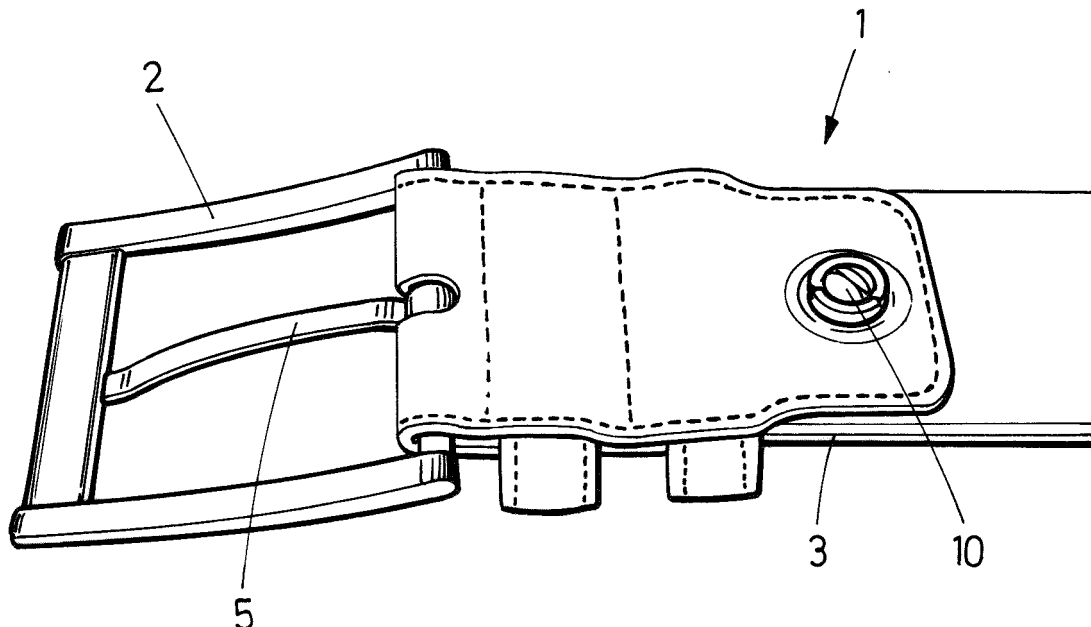


FIG.1

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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a system to facilitate adjusting the size of straps such as belts.

[0002] The main object of the invention relates to a system whereby the size of the belt can be shortened using a screw, especially designed for said purpose, and a concealed plate which does not make the external appearance of the same belt change.

BACKGROUND OF THE INVENTION

[0003] Today, accessories are common to hold up garments such as trousers, accessories such as straps, belts or braces.

[0004] Said accessories have adjustment mechanisms of the strap or the braces in accordance with the user's size or preferences. In this sense, braces usually have mechanisms for fixing to the trousers by clips or buttons, whilst for their adjustment, sliding locking mechanisms are used which exercise their locking function by saw (or flat) plate rotation, which exert pressure on at least one of the parts of the brace.

[0005] Said adjustment mechanism can also be found on belts, although this type of mechanism suits fabric and not leather belts, as they leave a mark and also the part of belt-strap that protrudes is too long for formal dress belts since the formal dress protocol determines a certain range of the visible part of the belt.

[0006] Normally, the surplus part is cut, or at least part of it; in this sense, we have the situation that the end of the belt not having the buckle, i.e. the tip, usually has a specific shape and features finishes and finishing touches that will be lost on cutting the tip, thereby involving the consequent loss of functionality of the belt.

[0007] It is, therefore, necessary to be able to adjust the belt, preferably those called formal dress belts involving a certain protocol, so that the adjustment neither affects its functionality nor fulfilling the protocol established in its use environment.

[0008] Likewise, nowadays, belt adjustment mechanisms and method are based on a buckle or plate having one or two prongs which traverse the belt and once closed already act to close it; the presence of a single prong implies that it can act as axis around which the belt-strap of the belt rotates, leaving the first misaligned with the buckle producing an undesired effect in the function of the belt and also leading to deformations of the belt strap due to the position it adopts when being used.

DESCRIPTION OF THE INVENTION

[0009] An object of the invention proposes a solution for the adjustment of belts which makes use of a heel system with a plate concealed inside the leather and a screw especially designed so that it can be loosened

manually or with the aid of a screwdriver, said heel can be with a single prong or two, depending on its design.

[0010] The i concealed metal plate has two protruding pivots, which will be in correspondence with two holes made in the belt strap which make possible to house said pivots once the heel is coupled, whilst the central threaded pivot will serve to fasten the heel to the belt using its screw especially designed for that purpose, after having made the hole for the perfect adjustment of the heel, the screw plus two pins traversing the two holes of lesser diameter corresponding to the diameter of each one of the pivots, thereby establishing three points that delimit the relative movement of the belt by these anchoring points.

[0011] If the pivots do not exist, the belt-strap will have a degree of freedom defined by the rotation capacity, the momentum, which is generated between the belt-strap and the heel whereon it could pivot. On limiting the rotation, by blocking said capacity using the fixing exercised by the pivots, said possibility is avoided, thereby, providing a solution to the aforementioned problem and maintaining the belt-strap or the belt, which can be of fine materials and, therefore, of a certain value, in a perfect condition without them undergoing undesired deformations and allowing the client the possibility to be able to shorten it at any time very easily and without the dangerous use of a screwdriver.

[0012] In performing the invention according to what has been explained above, an especially designed screw is foreseen, in which head a washer or strip articulated thereon have been coupled to facilitate the adjustment thereof, to screw or unscrew with greater ease and even without the need for a tool.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The invention can be put into practice in different ways, one of which will be described now only by way of example, and with references to the attached drawings, wherein:

Figure 1. - Shows a perspective view of the rear part of the belt where the screw can be seen closed and the belt adjusted.

Figure 2. - Shows a perspective view of the strip where anti-rotation pivots and the internally threaded bolt can be observed.

Figure 3. - Shows a perspective view of the strip where the anti-rotation pivots and the threading of the internally threaded bolt can be observed.

Figure 4. - Shows a view of the belt dismantled.

Figure 5. - Shows a view of the belt assembled and adjusted using the device of the invention.

PREFERRED EMBODIMENT OF THE INVENTION

[0014] A preferred embodiment of the invention is illustrated by figure 1, where the belt (1) adjustment device

can be observed.

[0015] The belt described here and which appears in figure 1 is composed of common elements in this type of formal dress accessory, such as a buckle (2), comprising at least one prong (5), designed to fasten the tip of the belt (1), a leather belt-strap (3) in a preferred embodiment of the object of the invention, which belt-strap (3) has two ends (3', 3''), a heel end (3') and a tip end (3''). The heel end (3') corresponds to the part of the belt-strap (3) joined to the buckle (2), said join can be made in different ways using different means of fixing such as adhesives, clip mechanisms, screwed joints, rivets, etc. wherein the heel end (3') comprises at least one hole (6) designed to house an internally threaded bolt (9) and orifices (11) located around the hole (6) designed to house anti-rotation pivots (8), whilst in the tip end (3''), opposite that of the heel (3'), bores (4) are located, designed to house a pin of the buckle (2) so that it blocks the movement of the belt-strap (3) through the buckle (2) also determining the length of the belt (1) once closed.

[0016] These common elements are accompanied by a series of differentiating features among which the inclusion of said anti-rotation pivots (8) of the belt-strap (3) stands out; for this purpose, a strip (7) is used such as that observed in figure 3 which is located preferably concealed in the heel end (3') of the belt-strap (3) so that it remains concealed and which also comprises, disposed orthogonally to a plane defined by the strip (7), an internally threaded bolt (9) in a central position and anti-rotation pivots (8), preferably at least two and respectively located around the internally threaded bolt (9); said strip (7) is complemented with orifices (11) made in the end of the heel (3') of the belt-strap (3) and located around the hole (6) designed to fix the anti-rotation pivots (8) and eliminate rolling.

[0017] In this way, on fixing the heel (7), and a screw (10) especially designed so as to be manipulated without the need for tools (a bar or the shank of a screwdriver can be used if desired) to fix it to the inside of the internally threaded bolt (9) passing through the belt-strap (3), on incorporating this it cannot rotate with respect to the internally threaded bolt (9) as occurs in other solutions since the anti-rotation pivots (8) pass through the orifices (11). When they are passed through, the heel (9) is fixed to the belt-strap (3) by a screw (10) designed to be threaded in the internally threaded bolt (9) as can be observed in figure 2 without it being necessary for this to use any tool since the screw (10) comprises a washer or a plate articulated in its head designed to permit the threading of the screw (10) with respect to the internally threaded bolt (9).

[0018] For this purpose, it is designed that the pins (8) have a section diameter less than that of the internally threaded bolt (9) and the same section diameter as the diameter of the orifices (11), wherein the orifices (11) have a diameter less than that of the hole (6), and are respectively located on each side of the internally threaded bolt (9) in aligned form, parallel to one another and

equidistant with said internally threaded bolt (9); and the orifices (11) are respectively located on each side of the hole (6) in aligned form, parallel to one another and equidistant with said hole (6).

[0019] To be able to perfectly adjust the belt-strap (3), first, the necessary length of the belt-strap (3) is determined in accordance with a waist perimeter of the user, or alternatively in accordance with a trouser size of said user; said length must coincide with a perimeter defined by the belt (1) once fastened, so that the pin (5) passes through one of the bores (4) located in one of the intermediate positions of the bores (4) preferably in a position equivalent to the second or third bore (4) starting from the tip end (3'').

[0020] Once the belt (1) is dismantled, as observed in figure 4, the belt-strap (3) is cut and a wedge notch of said belt-strap (3) is made at its buckle end (3'), the notch is performed at an angle from the end part of the heel end (3') towards the interior of the belt-strap (3). In a preferred embodiment of the object of the invention the notch is performed by a cutting machining, although any other kind of machining suitable for this kind of work can be performed, such as planning and sanding or skiving.

[0021] Once the notch has been made, the strip (7) is placed at the buckle end (3') and the internally threaded bolt (9) and the pins (8) are passed through the hole (6) and the orifices (11) respectively, closing the internally threaded bolt (9) with the screw (10) thus fixing the belt (1) in its new length as gathered from figure 5.

Claims

1. Adjustable belt comprising:

- a buckle (2), comprising at least one pin (5), designed to close the belt (1), and
- a belt-strap (3) comprising:

- a heel end (3') corresponding to the part of the belt-strap (3) joined to the buckle (2), and comprising at least one hole (6) designed to house an internally threaded bolt (9), and
- a tip end (3'') opposite the heel end (3') where bores (4) are located designed to house a pin of the buckle (2) so as to block the movement of the belt-strap (3) through the buckle (2), also determining the length of the belt (1) once closed,

characterized in that it additionally comprises:

- a strip (7) located at the heel end (3') of the belt-strap (3), said strip (3) also comprising, disposed orthogonally to a plane defined by the strip (7):

- the internally threaded bolt (9) in a central position, and
- anti-rotation pivots (8) respectively located around the internally threaded bolt (9),

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wherein the belt-strap (3) comprises in its heel end (3') orifices (11) located around the hole (6) designed to house the anti-rotation pivots (8).

2. Belt (1) **characterized in that** the pins (8) have the same section diameter as the diameter of the orifices (11). 10
3. Belt (1) **characterized in that** it additionally comprises a screw (10) designed to be threaded in the internally threaded bolt (9), said screw (10) comprising a washer articulated in its head designed to permit the operation of the screw (10) with respect to the internally threaded bolt (9). 15
4. Belt (1) **characterized in that** it additionally comprises a screw (10) designed to be threaded in the internally threaded bolt (9), the screw comprising a plate articulated in its head designed to permit the operation of the screw (10) with respect to the internally threaded bolt (9). 20 25
5. Belt (1) according to any of the previous claims, **characterized in that** the pins (8) are respectively located on each side of the internally threaded bolt (9) in aligned form, parallel to one another and equidistant with said internally threaded bolt (9); and the orifices (11) are respectively located on each side of the hole (6) in aligned form, parallel to one another and equidistant with said hole (6). 30 35
6. Belt (1) according to any of the previous claims, **characterized in that** the pins (8) have a section diameter less than that of the internally threaded bolt (9). 40
7. Belt (1) according to any of the previous claims, **characterized in that** the orifices (11) have a diameter less than that of the hole (6). 45

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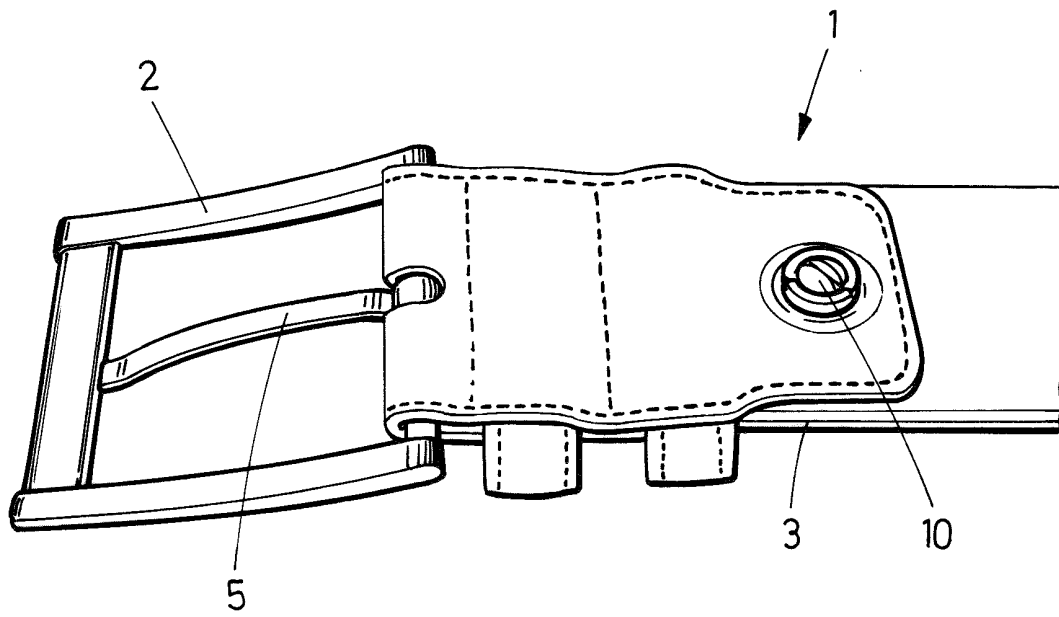


FIG.1

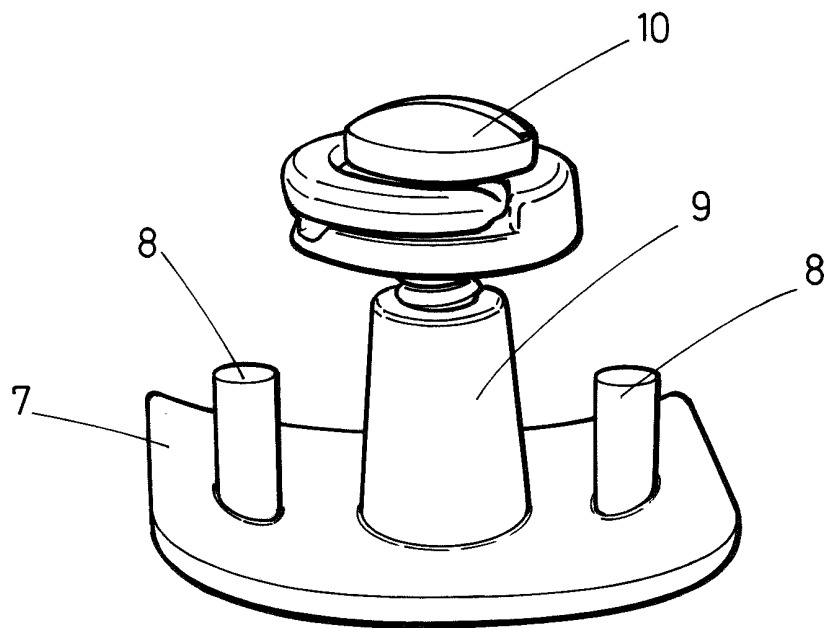


FIG.2

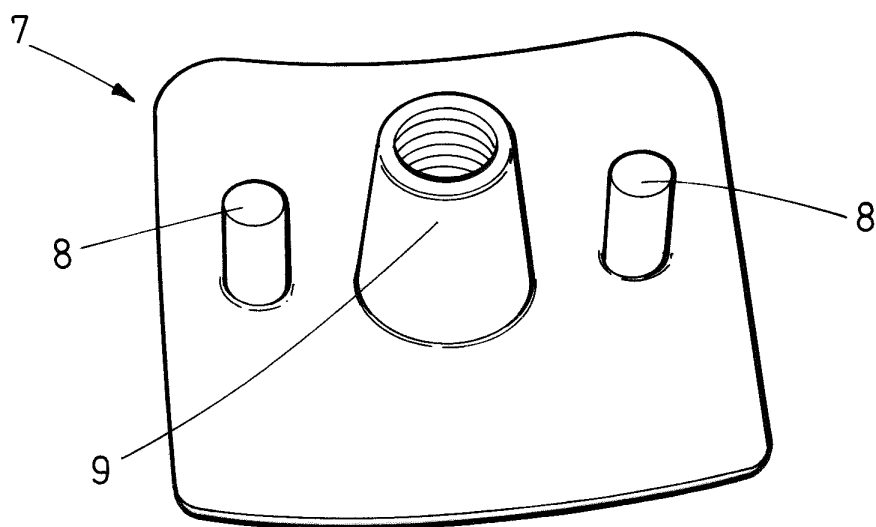


FIG. 3

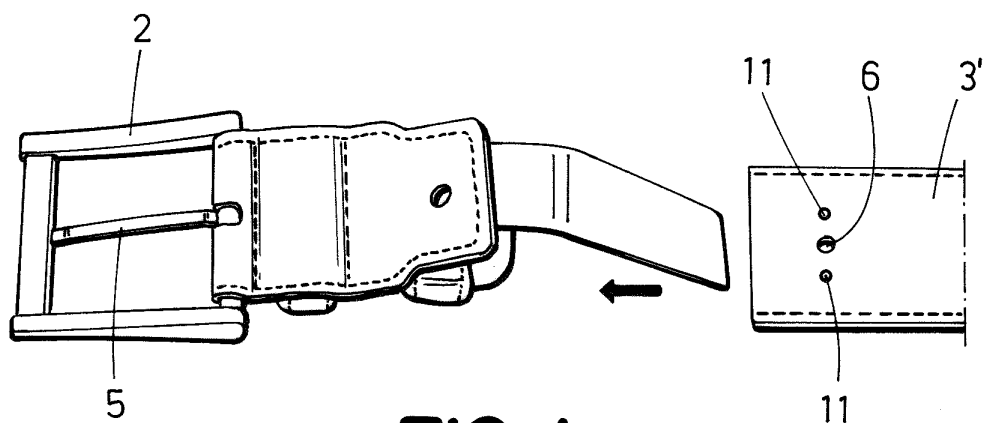


FIG. 4

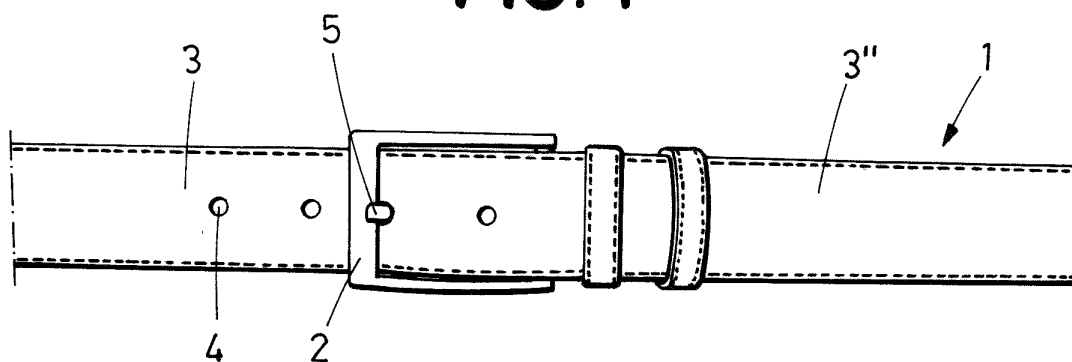


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2385

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 6 108 822 A (CALAGUI JUANITO E [US]) 29 August 2000 (2000-08-29) * figure 7 *	1	INV. A41F9/00 A44B11/00
A	----- US 5 875 523 A (CHEN KUO-JEN [TW]) 2 March 1999 (1999-03-02) * the whole document *	1	
A	----- US 3 903 547 A (SCHILLER BARRY) 9 September 1975 (1975-09-09) * the whole document *	1	
A	----- US 4 689 833 A (DANIELS JERRY [US]) 1 September 1987 (1987-09-01) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A41F A44B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 March 2013	Examiner Debard, Michel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 38 2385

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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15-03-2013

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6108822	A	29-08-2000	NONE	
US 5875523	A	02-03-1999	NONE	
US 3903547	A	09-09-1975	NONE	
US 4689833	A	01-09-1987	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82