PUSH-IN FASTENER

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ABSTRACT

An abutment frame is rigid with a fastener box. A pivoted frame has forward and rear members. Said rear member forms a pivot, which extends through said fastener box. Said pivoted frame is pivotally movable to a locking position, in which said forward member bears on said abutment frame. Spring means are provided, which are adapted to resiliently hold said pivoted frame in said locking position. A fastener tongue extends between said abutment frame and said forward member and into said fastener box and has on the side facing said pivoted frame a projection, which is locked between said forward member and said fastener box. Said tongue when removed from said fastener box is adapted to be inserted into the same between said abutment frame and said forward member until said projection snaps in between said forward member and said fastener box.

6 Claims, 4 Drawing Figures
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PUSH-IN FASTENER

This invention relates to a push-in fastener, particularly for waistbands and belts, which fastener comprises a fastener box for receiving a fastener tongue. One end of the waistband or belt is to be secured to one fastener member and the other end of the waistband or belt is to be secured to the second fastener member.

Whereas it is known to use hook-in and pivoted fasteners for similar purposes, push-in fasteners have not been conventionally used with waistbands and belts, probably because the fastener must resist tension.

It is an object of the invention to provide for waistbands and belts a fastener which is reliable and can easily be operated. In a push-in fastener comprising a fastener box for receiving a fastener tongue, that object is accomplished according to the invention in that a pivoted frame is mounted on the fastener box and comprises a rear member, which forms a pivot extending through the fastener box. Said frame is resiliently held in locking position. The fastener tongue comprises an upright lug or pin and as the fastener tongue is inserted into the fastener box said lug or pin moves under and is locked behind the forward member of the pivoted frame.

The pivoted frame is resiliently held in locking position in engagement with the flat transverse member forming the pivot and when swung up remains stationary in an open dead-center position.

Further details of the push-in fastener according to the invention are illustrated by way of example in the drawing and will be explained hereinafter. In the drawing,

FIG. 1 is a front elevation of a push-in fastener according to the invention and a diagrammatically indicated belt,

FIGS. 2 and 3 are central sectional views taken through the push-in fastener according to FIG. 1 in open and closed positions, respectively, and

FIG. 4 is a rear elevation showing the push-in fastener according to FIG. 1.

As is apparent from the drawing, the push-in fastener in the embodiment shown comprises a fastener box 1, which is rigid with an abutment frame 2 and with an eylet 3 for connection to one end portion 7 of the belt. The pivoted frame 8 is mounted on the fastener box 1 and comprises a rear transverse member 9, which forms a pivot extending through the fastener box. The fastener tongue 5 is provided with an upright lug 10 and as the tongue 5 is inserted, said lug 10 moves below the forward transverse member 11 of the pivoted frame 8 and is locked behind said forward transverse member 11. The flat rear transverse member 9 forming a pivot for the pivoted frame 8 is engaged by a leaf spring 12, which is adapted to hold the pivoted frame resiliently in locking position and to hold the pivoted frame in an open dead-center position. When motion is imparted to the pivoted frame in its dead-center position in direction A, the spring 12 moves the pivoted frame to its locking position. When motion is imparted to the pivoted frame in its dead-center position in direction B, the spring urges the pivoted frame further away from its locking position. The leaf spring 12 is secured at one end at 13 to the abutment frame 2 opposite to the fastener box 1 and comprises two spring arms 14, which extend into the open-bottomed fastener box 1. An inwardly offset lug 15, which is stamped integrally with the abutment frame 2, extends between the two spring arms 14.

The fastener tongue 5 terminates in a transverse groove 16, which in the locked position of the fastener is locked between the inwardly offset lug 15 and the transverse grooves 17 of the spring arms 14. To close the fastener, the fastener tongue 5 is moved into the box 1 and the upright lug 10 moves under the inclined forward transverse member 11 of the pivoted frame 8 so that the latter is resiliently raised. The lug then snaps into a recess 18 formed in the forward transverse member 11 before the fastener box 1. To open the fastener, the pivoted frame 8 must be slightly lifted so that the fastener tongue 5 can be freely pulled out of the box.

What is claimed is:

1. A push-in fastener, which comprises a fastener box, an abutment frame rigid with said fastener box, a pivoted frame having forward and rear transverse members, said rear transverse member forming a pivot, which extends through said fastener box, said pivoted frame being pivotally movable to a locking position, in which said forward transverse member bears on said abutment frame, spring means adapted to resiliently hold said pivoted frame in said locking position, and a fastener tongue extending between said abutment frame and said forward transverse member into said fastener box and having on the side facing said pivoted frame a projection which is locked between said forward transverse member and said fastener box, said tongue when removed from said fastener box being adapted to be inserted into the same between said abutment frame and said forward transverse member until said projection snaps in between said forward transverse member and said fastener box.

2. A fastener as set forth in claim 1, in which said projection is a lug.

3. A fastener as set forth in claim 1, in which said rear transverse member is flat, said spring means consists of a leaf spring, which engages said rear transverse member and which is adapted to hold said pivoted frame also in an open dead-center position.

4. A fastener as set forth in claim 3, in which said fastener box is open on the side facing said abutment frame, said leaf spring has a rear end portion secured to said abutment frame on the inside thereof and two spring arms extending through said abutment frame into said fastener box, said abutment frame is integrally formed with a stamped lug, which extends toward said rear transverse member between said spring arms and is offset into said fastener box, and said tongue has a leading end portion disposed between said spring arms and said stamped lug.

5. A fastener as set forth in claim 4, in which said leading end portion is formed with a transverse groove on the side facing said spring arms and said spring arms are formed on the side facing said leading end portion with raised portions extending into said groove.

6. A fastener as set forth in claim 1, in which said forward transverse member and said abutment frame converge toward said fastener box when said
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3. Pivoted frame is in said locking position to facilitate the movement of said projection between said forward transverse member and said abutment frame as said tongue is moved into said fastener box.

4. Said forward transverse member is formed with a recess adjacent to said fastener box, and said projection extends into said recess.

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