Nov. 12, 1935. A. H. NAGEL 2,020,371

BELT BUCKLE

Filed Feb. 20, 1935

Fig. 1.

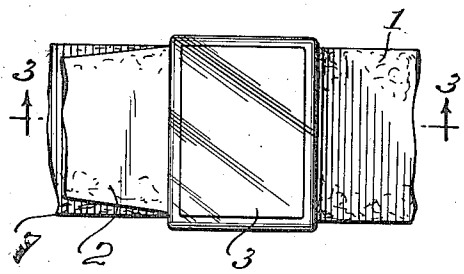


Fig. 2.

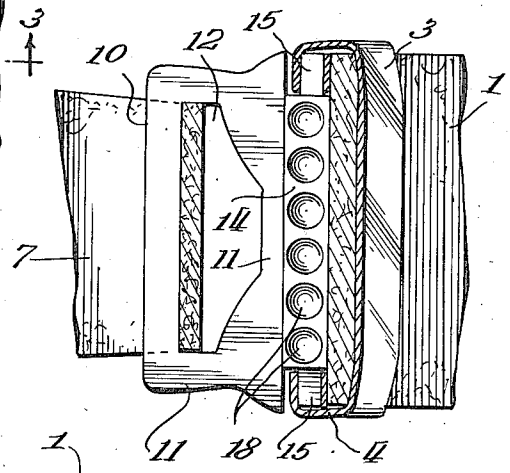
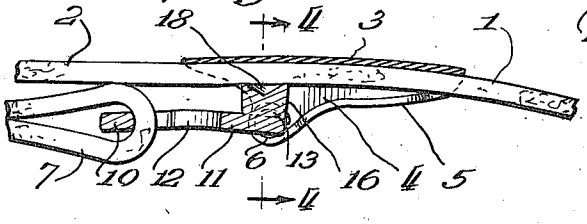


Fig. 3.



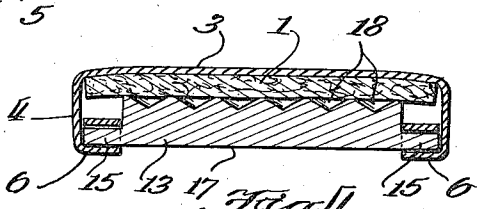


Fig. 4.

Fig. 5.

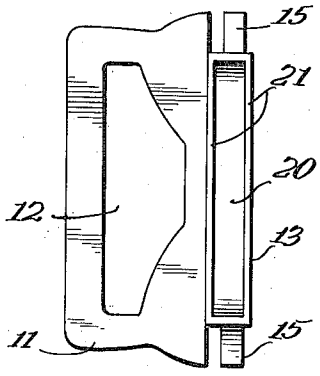
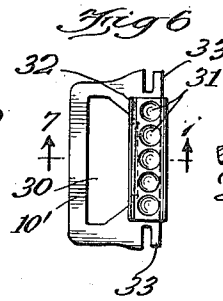


Fig 6



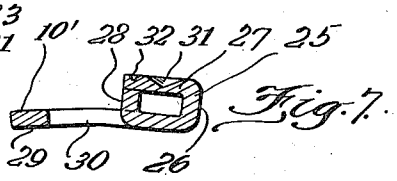


Fig. 7.

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UNITED STATES PATENT OFFICE

2,020,371

BELT BUCKLE

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Application February 20, 1935, Serial No. 7,367

11 Claims. (Cl. 24—191)

This invention relates generally to belt buckles, and more particularly to an improved belt buckle of the clamping lever type.

An object of the invention is to provide in a belt bucklet of the character described a novel and improved construction of clamping lever, whereby a more positive gripping action on the belt may be had while at the same time avoiding the danger of cutting into or otherwise causing injury to the belt.

Another object of the invention is to provide in a belt buckle of the character described a novel and improved clamping lever having a relatively wide flange portion adapted for engagement with the belt when in gripping relation therewith, the face of the flange contacting the belt being provided with means in the form of a suction cup, said means being effective for securely holding the belt when in locked position against slipping with the result that a secure and positive grip is obtained without the danger of cutting or otherwise causing injury to the belt.

A still further object of this invention is to provide in a buckle of the character described a novel and improved clamping lever having a loop section for engagement with one end of the belt and a flange section for gripping the free end of the belt, said lever being journaled within the belt buckle and adapted when in one position to permit the passage of the belt between the buckle and the flange portion and when in another position to readily clamp the belt between said flange portion and said front plate of the belt buckle. That portion of the flange which contacts the belt in the gripping position is provided with suction means, which means may be in the form of a single depression extending across the entire face of the flange portion of the lever or a plurality of spaced depressions arranged along the contacting face of the flange portion of the lever.

A still further object of the invention is to provide in a belt buckle of the character described a novel and improved clamping lever having integrally formed therewith a flange portion adapted for gripping and clamping the belt at any desired point, said flange portion having suction means associated therewith and adapted for facilitating in holding the belt in locked position.

A further object of the invention is to provide a belt buckle of the character described which will be simple in construction, assembly and operation, which may be produced along lines convenient for low cost manufacture, having only a few parts which will not readily get out of order and which will be highly efficient for carrying out the purposes for which it is designed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combinations of parts hereinafter more fully described, illustrated in the accompanying drawing, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantage of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawing a preferred embodiment thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages, should be readily understood and appreciated.

Referring to the drawing in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawing:

Figure 1 is a front face view of a belt buckle embodying my invention showing a portion of the belt associated therewith;

Fig. 2 is an end elevational view of belt buckle embodying my invention with the clamping lever thereon being shown in open position and the buckle itself being shown in section;

Fig. 3 is a transverse sectional view taken on substantially line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a top plan view of a modified form of clamping lever;

Fig. 6 is a top plan view of a still further modified form of my invention; and

Fig. 7 is a transverse sectional view taken substantially along lines 7—7 of Fig. 6.

Referring to the drawing more specifically by characters of reference, the numeral 1 designates a belt having the free end 2 and being provided with a belt buckle having a front plate 3, which plate has the rearwardly extending flanges 4, which flanges are then bent inwardly towards each other to form the flanges 5 arranged substantially parallel to the front plate 3. The rear edges of the flanges 5 are cut away and rolled up to form the loops 6, within which loops is eccentrically pivotally mounted my improved clamping lever

generally designated by the reference character 10.

The clamping lever per se comprises a loop section 11 having the loop 12 formed therein, within which loop is secured the end 7 of the belt 1, the other free end of the belt being held in locked position by the clamping lever 10 in a manner to be presently more fully described. The gripping member of the clamping lever comprises a flange 13 which is formed substantially at right angles to the loop section 11, said flange being of substantially rectangular formation and having a relatively wide face 14, which face is adapted for engagement with the free extremity of the belt to hold the same in any desired position shown in Fig. 3 of the drawings.

Extending from each end of the flange 13 adjacent the bottom edge thereof is a trunnion 15, which trunnion is of cylindrical shape and is adapted for disposition within the loops 6 for pivotal movement therein. As shown in Figs. 3 and 5, the trunnions lie substantially in the same plane with the bottom edge 17 of the flange 13, whereas the upper edge 14, which is the contacting edge of the lever, is spaced a considerable distance from said trunnions, as shown in Fig. 4. Thus when the lever 11 is swung to the position shown in Fig. 3 it will be effective for wedging or clamping the free extremity of the belt between the face 14 of the flange and the face plate 3 of the buckles where as when moved to its unlocking position, the side edge 16 of the flange 13 will be brought in substantially parallel relation to the face plate 3, in which position it will readily be apparent that the free extremity of the belt may be readily moved between the clamping lever and the face plate 3.

Although a comparatively strong hold may be had by reason of the wedging action just described when the lever 11 is moved to the position shown in Fig. 3, there is the possibility that slipping may occur from this locked position. In order, therefore, to avoid any such slipping and to obtain a more positive and secure hold, the upper face 14 of the flange is provided with a plurality of annular depressions 18, which depressions are adapted to act in the manner of suction cups when brought into contacting engagement with the belt. These suction cups 18 will co-operate with the comparatively smooth belt surface to create a vacuum in each of said cups, these vacuums then being effective for retaining the belt against slipping. In this manner, the clamping action on the belt is obtained not by portions of the lever cutting into or biting into the belt, the result of which may result in injury to the belt, but by the action of the suction cups on the belt, thereby resulting in a positive grip on the belt, while at the same time avoiding the possibility of any injury to the belt. The comparatively wide gripping face of the flange with the plurality of cups which may be provided on said face will ensure at all times a very sesure hold on the belt when the clamping lever is in operative position.

In the modified form of clamping lever shown in Fig. 5, the construction of said lever is substantially the same as the one shown in Figs. 2, 3 and 4, the only difference being in the structure of the contacting face of the flange 13. As shown in this figure the lever comprises the loop sections 11 having the loop 12 provided therein and the flange portion 13 adjacent the lower edge of which are provided at each end thereof the trunnions 15 for disposition within the loops 6 of the belt buckle 3. The contacting face of the flange 13 of this form is provided with an elongated depression 20 extending across substantially the entire face of the flange and being surrounded on all four sides thereof by the upstanding flange 21. The depression 20 forms a suction cup which in operative position will be effective for securely locking the belt and holding the same at any desired point. In this form, the depression 20 performs the same function as the plurality of suction cups 18 described in connection with the construction shown in Figs. 2, 3 and 4.

In the modified form shown in Figs. 6 and 7, the clamping lever is constructed somewhat differently from the forms hereinbefore described, in that the flange portion 25 is formed by bending the body of the lever 10' adjacent one end thereof upwardly to form one wall 26 of the flange 25 and then back upon itself to form the contacting face 27, the other face 28 of said flange being formed by bending the loop section 29 of the lever upwardly to engage the wall 27 of the flange. The loop section 29 is provided with a loop 30 for receiving one end of the belt.

In order to facilitate the holding action of the lever, the contacting face 27 of the flange is provided with a plurality of suction cups 31 similar to the cups 18 shown in connection with the form shown in Figs. 2, 3 and 4. The face 27 is also provided with a longitudinally disposed ridge 32 which will further facilitate and aid in the holding action of the lever. In this form, the trunnions 33 are stamped from the body of the lever, said trunnions lying substantially in the same plane with the loop section and are adapted for reception within the loops 6 in the manner described in connection with the other forms.

From the above the manufacture, assembly and operation of my improved buckle should be readily understood. The foregoing lever 10 therefor may be formed from cast metal when constructed in the form shown in Figs. 2, 3 and 4, or the same may be stamped or bent to the desired shape when formed in the manner shown in Figs. 6 and 7.

The operation of the device should be readily understood as the clamping lever when assembled with the buckle proper will when in one position be in inoperative relation with respect to the free extremity of the belt 1, and when swung to its other position will securely clamp the belt and hold the same at any desired point, the clamping effect being accomplished without the danger of causing injury to the belt by cutting into the same with the result that the body of the belt is eventually damaged at the point usually engaged by the clamping lever and thus becomes ineffective for securely holding the belt at that particular point. This difficulty or disadvantage is readily eliminated in the present construction by reason of the fact that the holding action is due to the suction cup arrangement provided on the contacting face of the flange of the contacting lever, thereby a rigid hold may be had without the lever having to bite into or cut into the belt body.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood and appreciated from the foregoing without further description, and it should also be manifest that while preferred embodiments of the invention has been shown and described for illustrative purposes, the structural details are, nevertheless, capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. In combination with a belt buckle body of the

character described, of a clamping lever, said lever having a loop section and a flange portion, said flange portion being of substantially rectangular formation and being eccentrically mounted on said buckle body for pivotal movement relative to the front plate of said belt buckle body, whereby said flange portion will be inoperatitve for clamping the free extremity of the belt when moved to one position and will be operative for holding the belt at any desired point when moved to its operative position, and means in the form of an annular depression adapted to act as a suction cup provided on the contacting face of the flange portion for facilitating in holding the belt at any desired point.

2. In combination with the belt buckle body of the character described, a clamping lever having a loop plate and a flange portion arranged adjacent one side thereof, trunnions carried by said flange portion, said trunnions lying substantially in the same plane with the loop plate and being pivotally mounted on said buckle body and when so mounted said lever will be eccentrically arranged relative to the front plate of the buckle body whereby when moved in one position said lever will be inoperative for clamping the belt and when moved in another position will be effective for holding the belt at any desired point, and means provided on the contacting face of the flange portion in the form of spaced annular depressions adapted each to act as a suction cup for facilitating in holding the free extremity of the belt in operative position.

3. In combination with a belt buckle body of the character described, of a clamping lever having a base and a flange substantially perpendicular thereto, a loop formed in said base, and trunnions extending from said flange and being pivotally mounted on said buckle body, said trunnions being arranged substantially in the same plane as the base to provide an eccentric mounting, one face of said flange being provided with an annular cavity which will act as a suction cup when the clamping lever is in operative position for holding the free extremity of the belt at any desired point.

4. The combination of a belt buckle body of the character described, of a clamping lever having a base and a flange formed integrally therewith and arranged substantially perpendicular thereto, said flange being of substantially rectangular formation and having means associated therewith eccentrically mounting the same on the front plate of said belt buckle body, said flange having one face thereof adapted for contacting engagement with the belt when in operative position, said last mentioned face having a depression provided therein closed on all sides but one, said open side having the entire periphery thereof in contacting engagement with the belt body when in belt clamping position, so as to form with said belt body a substantially air tight chamber when in such clamping position, whereby said depression will act as a suction cup when brought into contacting engagement with the belt body.

5. The combination of a belt buckle body of the character described, of a clamping lever having a base and a flange formed integrally therewith and arranged substantially perpendicular thereto, said flange being of substantially rectangular formation and having means associated therewith eccentrically mounting the same on the front plate of said belt buckle body, said flange having one face thereof adapted for contacting engagement with the belt when in operative position, said last mentioned face being provided with a plurality of spaced annular depressions adapted each to act as a suction cup when brought into contacting engagement with the belt.

6. A clamping lever for a belt buckle body of the character described comprising a body, a flange substantially perpendicular thereto, said flange being of substantially rectangular formation and having means associated therewith for eccentrically mounting the lever upon the front plate of the buckle body, one face of said flange being provided with a depression which is closed on all sides excepting the one facing the belt when in belt clamping position, said open side having the entire periphery thereof in contacting engagement with the belt body when in such clamping position so as to form a substantially air tight chamber with said belt body when in belt clamping position, whereby said depression will act as a suction cup when brought into contacting engagement with the belt.

7. A clamping lever for a belt buckle body of the character described comprising a body portion and a flange substantially perpendicular thereto, a loop formed in said body portion, said flange being of substantially rectangular formation and having means associated therewith for eccentrically mounting the lever upon the front plate of said belt buckle body, one face of said flange being adapted for clamping the free extremity of the belt between it and the front face of the buckle body, said flange face being provided with a plurality of spaced depressions formed therein, said depressions being provided with one open end, the entire periphery of which is in contacting engagement with the belt body when in belt clamping position so as to form with said belt body a substantially air tight chamber when in such clamping position, whereby each of said depressions will act as a suction cup when brought into contacting engagement with the belt.

8. In a device of the character described, a belt buckle body comprising a front face, side walls projecting rearwardly therefrom, inwardly extending portions projecting from said side walls, the rear edges of said inwardly extending portions being folded upon themselves to provide loops, a clamp lever eccentrically mounted within said loops, said clamp lever comprising a loop section and a flange substantially perpendicular thereto, said flange having a face for contacting the free extremity of the belt when the lever is moved to operative position, said face being provided with a plurality of spaced annular depressions formed therein, each of said depressions acting as a suction cup when brought into contacting engagement with the belt.

9. In a belt buckle, a face plate, a lever fulcrumed on the face plate, said lever being provided at one end with a cavity closed on all sides but one said open side having its entire periphery in contacting engagement with the belt body when in belt clamping position so as to form a substantially air tight chamber with said belt body when in such clamping position, whereby said cavity will be capable of acting as a suction cup when brought into contacting engagement with the belt.

10. In a belt buckle, a face plate, a lever fulcrumed on the face plate, said lever being provided at one end with a plurality of spaced cavities, each being provided with only one open end, the entire periphery of which open end is in contacting engagement with the belt body when in

belt clamping position so as to form with said belt body a substantially air tight chamber when in such clamping position, whereby a partial vacuum will be created in each of said cavities when brought into contacting engagement with the belt for facilitating the holding of the latter in operative position.

11. In a belt buckle, a face plate, a lever fulcrumed on the face plate, said lever being provided at one end with an annular cavity adapted to act as a suction cup when brought into contacting engagement with the belt, said end of the lever having the cavity being also provided with a longitudinal ridge arranged independently of said cavity.

ARMIN H. NAGEL.