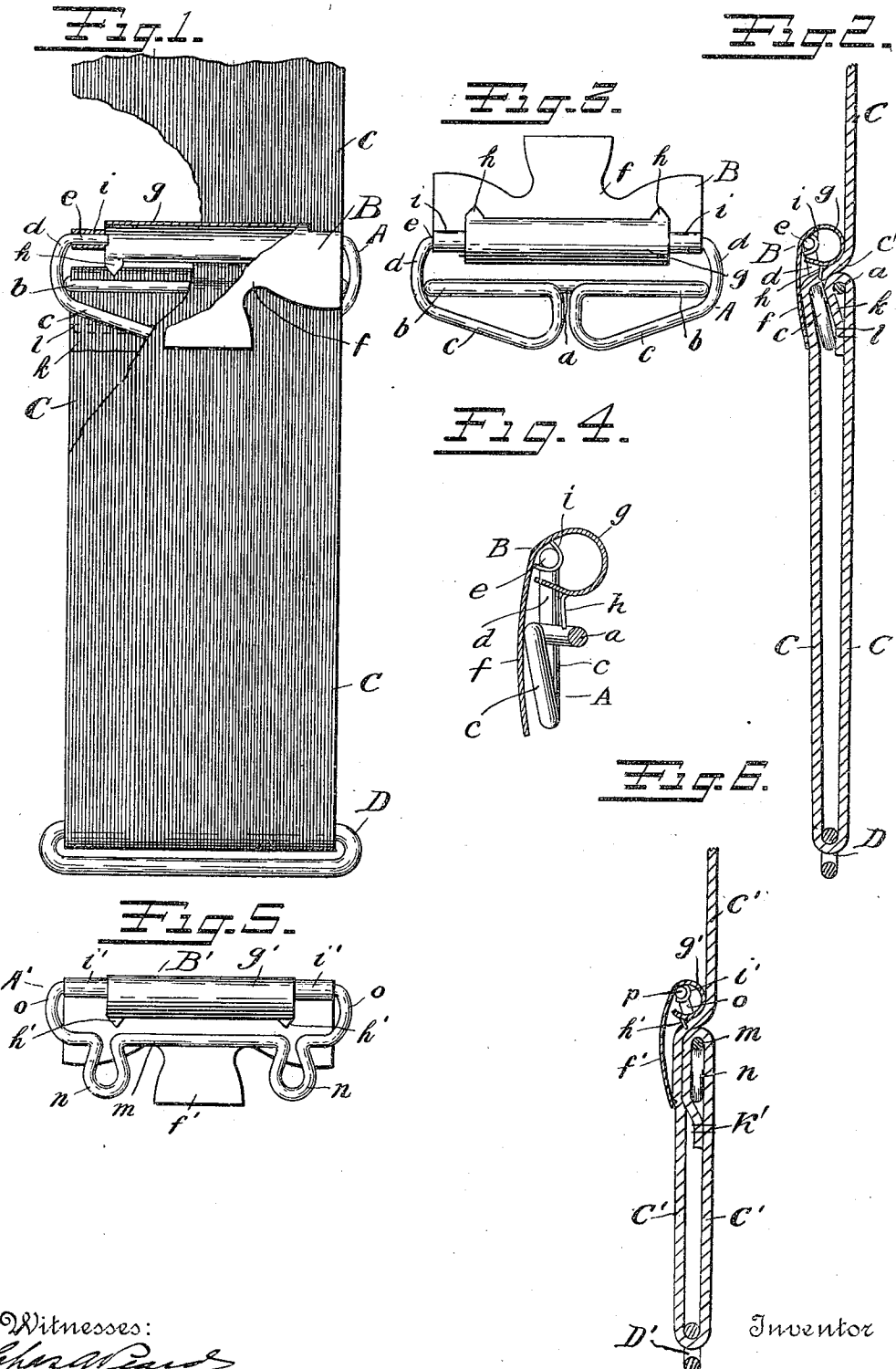


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BUCKLE.
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BUCKLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER A. HOLDEN, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Buckles, of which the following is a specification.

My invention relates to buckles of the lock lever class designed for a supporting strap or webbing.

The object of my invention is to provide a buckle of this character having a novel, efficient and attractive lever constructed to deflect the running portion of the webbing out of its normal vertical alinement as it passes through the buckle and to firmly hold the same in its adjusted position.

With this principal object in view my invention consists in the details of construction and manner of operation more fully set forth in the following description and accompanying drawings in which like reference characters refer to corresponding parts.

In the drawings: Figure 1 is a front view of the buckle a portion of the lever and attached webbing which is under stress being shown broken away; Fig. 2, a central vertical section of the buckle shown in Fig. 1; Fig. 3, a front view of the buckle shown in Figs. 1 and 2 before the webbing is attached and showing the lever raised. Fig. 4, an enlarged vertical section of the buckle shown in Fig. 3 but showing the lever down; Fig. 5, a rear view of a modification, Fig. 6, a central vertical section of the modification shown in Fig. 5.

Referring to Figs. 1, 2, 3 and 4 the frame or back A is made out of a single piece of wire doubled forwardly upon an intermediate portion forming the web attaching member or rear bar *a* and a divided web engaging or front member or front bar *b*, *b* spaced from the rear bar *a* leaving an elongated loop for the passage of the end of the webbing, then dropped abruptly from the divided front bar *b*, *b* and carried outwardly in opposite directions to form the depending portions *c*, *c* having their outer extremities carried upwardly around the ends of the loop formed by front and rear bars *a* and *b*, *b* forming the side members *d*, *d* and terminating in the inwardly projecting pintles *e*, *e*. If desired the front bar *b*, *b* may be roughened, serrated or otherwise

present a web gripping surface to the webbing. Hinged to the pintles *e*, *e* is the web locking lever B preferably made out of sheet metal bent to form a front portion or shield *f*, having its top side curled or rolled into a web deflecting member *g*, the under side of which is provided with the laterally spaced and projecting web penetrating teeth or points *h*, *h*, which are formed by slitting the metal forming the roll and bending portions adjacent to the slits downwardly. The roll or deflecting member *g* is embraced between a pair of straps which latter are curled around the pintles *e*, *e* to form pintle sockets, *i*, *i* on the sides of the lever.

The extremity *k* of the webbing C is cramped or threaded through the loop or passage formed by the rear bar *a* and the front bar *b*, *b* being closely embraced between these bars, then folded around the rear bar *a* and may if desired be sewed upon itself by stitches *l*. The extremity of the webbing C being thus secured to the buckle, the running portion is carried downwardly forming what may be styled the lower reach and returning upon itself passes upwardly in front of the depending portions *c*, *c* and front bar *b*, *b* in the rear of and beneath the web locking lever *b*, the roll or deflecting member *g* of which is swung over the top of the front bar *b*, *b* until its rear face portion is disposed slightly to the rear of the front bar *b*, *b* in a position immediately above the rear bar *a*, and coacts with the front bar *b*, *b* to deflect the running portion out of its normal vertical alinement as it passes upwardly above the buckle forming what may be styled the upper reach. During this closing movement of the lever B the teeth or points *h*, *h* snap over the front bar *b*, *b* and penetrate the upper surface of the deflected portion *c'* of the webbing in a position slightly forward of the rearmost portion of the deflecting member or roll *g*, that is somewhere between the front and rear bars. In this manner the running portion of the webbing is deflected by the roll *g* for the purpose of bringing the upper and lower reaches into vertical alinement along the back of the buckle and is firmly held by the spaced teeth *h*, *h*, but if desired the eccentric arrangement of the roll *g* instead of the snap over action of the points *h*, *h*, may be utilized to coact with either the front or

rear bars to hold the lever in its closed position.

The front bar *b*, *b* being mounted on the inner extremities of the depending portions *c*, *c* is enabled to yield bodily downwardly and rearwardly together with the rear member *a* in response to the swinging movement of the deflecting member *g* of the lever without disturbing the relative arrangement between these two members. This yielding movement besides facilitating the snap over action of the points presents a passage of variable width to the running portion accommodating different thicknesses of webbing, thereby eliminating the necessity of providing different sizes of buckles for the different kinds of webbing.

The buckle strung as described forms an adjustable loop in the webbing carrying the cast off piece *D*, and the entire back *A* of the buckle is substantially covered exposing only the side members *d*, *d*. The back *A* is prevented from tilting while the lever *B* is being manipulated and is properly balanced on the webbing when the latter is under draft or tension by means of the transversely disposed depending portions *c*, *c* which are confined within the adjustable loop in the webbing and serve as feet to engage the same. It is obvious that the rear bar *a* does not necessarily coact in any manner with the roll *g* on the lever, since this bar may be utilized solely to carry the extremity *k* of the webbing at any desired distance below the deflected portion *c'*. I prefer, however, to locate the rear bar *a* substantially on a level with the front bar *b*, *b* so as to hold the folded extremity *k* of the webbing substantially against the deflected portion *c'* passing around the face of the roll *g* without effecting any gripping or clamping action between these two portions, since this arrangement presents a neat appearance when the buckle is viewed from the rear and further retards the tendency of the buckle to tilt rearwardly on the webbing when the latter is slack and the goods on display.

Heretofore in buckles of this type wherein a lever is employed to deflect the running portion of the webbing over a cross bar, it has been customary to mount the lever so that its toothed or serrated edge will swing clear of the cross bar when the buckle is opened and closed. This is necessary for the reason that should the edge of the lever not swing clear of the cross bar, but should be snapped or sprung over the latter in closing the buckle, this edge would be more or less permanently locked behind the cross bar, thus causing such difficulty in the manipulation of the lever as to make the snap over arrangement impracticable. On account of this difficulty it is necessary in order to hold the buckle closed to rely on the resistance

offered by the layers of webbing, which are pinched or compressed between the lever edge and the cross bar when the lever edge swings over the cross bar, in which case the lever must be mounted a predetermined distance from the cross bar in order to accommodate a predetermined thickness of webbing, unless this distance is made variable by the employment of a spring back, and even then it is necessary that the lever edge should swing clear of instead of snapping over the cross bar. By providing the lever with spaced points, as in the present invention, a positive snap over action may be effected since the points being spaced apart, unlike the ordinary toothed lever edge, will readily spring or snap over the cross bar in opening and closing the buckle. In Figs. 1 to 4 inclusive my lever is arranged so that the roll *g*, which deflects the webbing over the cross bar *b*, may swing clear enough of the bar *b* to accommodate layers of webbing of both maximum and minimum thickness, since it is not necessary to pinch or compress the webbing between these two members in locking the running portion. The locking or holding action may be performed by the spaced points alone, which latter by penetrating the surface of the webbing, not only effect a holding action on either thick or thin webbing but may also swing close down on the cross bar *b* to effect a snap over action, as shown in Fig. 4. Thus it will be observed that in my buckle wherein the deflection of the webbing is effected by one member of the lever and the holding or locking of the running portion by a different member or members, it is possible to leave a maximum space or clearness between the deflecting member and cross bar to accommodate either thick or thin webbing, and at the same time preserve the snap over action of the points.

By employing a lever having a cam like deflecting surface provided with projecting teeth on its underside, instead of a lever provided with a toothed or serrated edge, I am enabled to utilize sharp points constructed to penetrate that portion of the webbing in which there is no sharp bend so that the strain on the webbing is at substantially right angles to the direction of the points. Points which are thus disposed not only securely hold the webbing independently of the bend therein but also engage and withdraw themselves from the webbing readily when the buckle is being closed and opened, since the degree of penetration is determined by the throw on the lever rather than by the stress on the webbing which latter is the case in buckles in which the levers have toothed or serrated edges for deflecting the webbing.

Although my improved lever is particularly adapted for use on backs or frames

having two adjacent cross bars as above described yet I do not regard my invention as being limited to a buckle having any specific construction of back, since my lever
 5 may be used on most any style of buckle wherein the webbing is deflected out of its normal alinement, as is instanced in Figs. 5 and 6 wherein I have shown my lever mounted on a back having a single cross
 10 bar. In this modification the buckle consists of a back A' made out of a single piece of wire bent up to form a substantially straight intermediate portion or bar *m*, then bent downwardly from the ends of the bar and
 15 returned on itself forming the transversely disposed loops or bends *n*, *n*, then carried upwardly above the bar to form sides *o*, *o* having the upper extremities bent inwardly to form pintles *p*, *p*. Hinged to the pintles
 20 *p*, *p* is the web locking lever B' having the front portion *f'*, deflecting member *g'*, web holding teeth *h'*, *h'* and the pintle sockets *i'*, *i'*. The extremity *k'* of the webbing C' is passed over the bar *m* and stitched upon
 25 itself to form a terminal loop embracing the bends *n*, *n*. The extremity thus secured the running portion of the webbing is carried downwardly and returning upon itself passes upwardly through the buckle between the terminal securing loop and the
 30 lever B' the deflecting member *g'* of which is swung over the top of the bar *m* and deflects the running portion over the looped extremity *k'*. In closing the lever the teeth or points *h'*, *h'* engage the front surface of the running portion of the webbing in a
 35 position well forward of the rearmost portion of the deflecting member or roll *g* in a manner which causes no sharp bend in the deflected portion as is customary in levers having toothed or serrated edges and securely hold the same in its adjusted position. The eccentric action of the deflecting
 40 member *g'* may be utilized, if desired, to lock the lever in its closed position, but such locking arrangement is rarely sufficient for holding the webbing from slipping when under stress, the points *h'*, *h'* being depended on for this purpose. The buckle
 50 strung as described forms an adjustable or running loop in the webbing C' carrying the cast off piece D' or other suitable attachment, and the back of the buckle presents the "rustless effect" so called because the
 55 back is covered with webbing. The bar *m* being carried by the adjacent extremities of the bends *n*, *n*, which may serve as yielding or spring supports when the wire is sufficiently resilient, is enabled to yield bodily in
 60 response to any wedging action of the lever thereby permitting the use of varying thicknesses of webbing on one standard size of buckle.

From the above description it will appear that my invention is susceptible of such further modification as may fairly come within
 65 the scope of the appended claims.

Having now described my invention what I claim and desire to protect by Letters
 Patent is:

1. A buckle comprising a frame made out of a single piece of wire having its intermediate portion doubled forwardly upon itself to present front and back bars spaced apart to form a vertical passage for the insertion
 75 of the end of a webbing, then dropped from said front bar and carried outwardly and upward around the ends of said bars to form sides, the extremities of the wire being then bent inwardly at the top of said sides
 80 to form pintles, and a web holding lever provided with a web deflecting roll carrying spaced web piercing points on its underside, the said roll being arranged to swing over
 85 said rear bar and said points to snap over said front bar when the buckle is closed.

2. A buckle comprising a back provided with a web attaching member and a sheet metal lever hinged to said back above said
 90 attaching member, the said lever having its top portion bent rearwardly and downwardly then inwardly to present an under face portion arranged to swing over the top of said attaching member when the buckle
 95 is closed and said under face portion being slit to permit portions thereof adjacent to the slits to be bent downwardly to form web penetrating spurs disposed forwardly of the rearmost side of the face portion, so
 100 that the strain on the webbing is in a direction at substantially right angles to the direction of the spurs.

3. A buckle comprising a back provided with front and rear web bars spaced apart, and a lever hinged to said back having a
 105 member for deflecting the running portion of a webbing over the top of said bars when the buckle is closed, the said lever being provided with penetrating points arranged to snap over said front bar to hold the buckle
 110 closed.

4. A buckle comprising a wire back bent up to present front and rear web bars spaced apart and a lever hinged to said back having
 115 a web deflecting member provided with a face portion on its under side carrying laterally spaced web penetrating points, the said rear bar being arranged to lie under said face portion and the said front bar to spring under said points when the buckle
 120 is closed.

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