

(No Model.)

D. L. SMITH.
BUCKLE.

No. 476,566.

Patented June 7, 1892.

Fig. 1

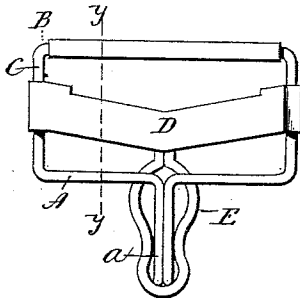


Fig. 2

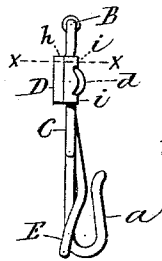


Fig. 3

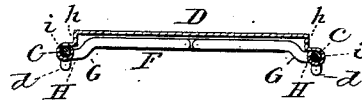


Fig. 4

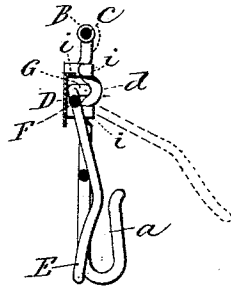


Fig. 5

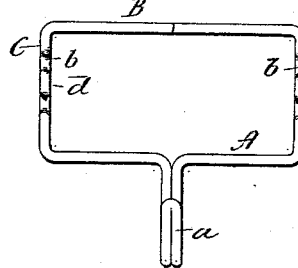


Fig. 6

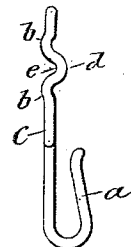


Fig. 7

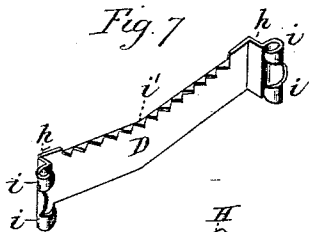


Fig. 8

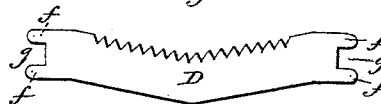


Fig. 10

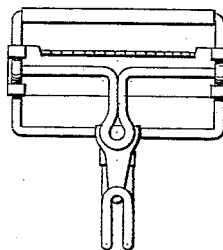
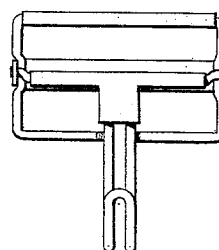


Fig. 11



Witnesses
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Inventor.
By atty.
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UNITED STATES PATENT OFFICE.

DWIGHT L. SMITH, OF WATERBURY, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO EARL A. SMITH, OF SAME PLACE.

BUCKLE.

SPECIFICATION forming part of Letters Patent No. 476,566, dated June 7, 1892.

Application filed December 21, 1891. Serial No. 415,768. (No model.)

To all whom it may concern:

Be it known that I, DWIGHT L. SMITH, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Buckles; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the buckle; Fig. 2, a side view of the buckle complete; Fig. 3, a horizontal section on line *xx* of Fig. 2; Fig. 4, a vertical section on line *yy* of Fig. 1; Fig. 5, the frame detached; Fig. 6, a side view of the frame; Fig. 7, a perspective view of the bearing-bar detached; Fig. 8, the blank from which the bearing-bar is formed; Fig. 9, a perspective view of the lever detached; Figs. 10 and 11, modifications.

This invention relates to an improvement in that class of buckles which are made principally from wire and specially adapted for suspenders, and particularly to that class in which the frame is provided with a bearing-bar, combined with a lever hinged to the frame, so as to grasp the suspender between the said lever and the bearing-bar, and is an improvement upon the buckle for which Letters Patent No. 378,732 were granted to this applicant February 28, 1888. In that patent the buckle-frame is made from wire bent to form the two sides and the two ends, the ends of the wire brought together upon one side. Longitudinally across the frame is a bearing-bar made from sheet metal and secured to the ends of the frame. In the ends of the frame a lever is hung, the lever made from wire, the wire doubled, and the branches turned to the right and left at the upper end of the lever and so as to form pivots in the frame, and to the wire lever thus hung a sheet-metal jaw is attached, adapted to grasp the suspender between the edge of the jaw and the said bar and so that by swinging the lever outward the engagement between the jaw and the suspender is released, so as to permit the adjustment of the suspender. This construction makes the clamping-jaw rigid and unyielding.

The object of my present improvement is to make the lever elastic and so as to produce an elastic clamping-jaw. To this end my invention consists in the construction as hereinafter described, and particularly recited in the claims.

The frame is composed of two sides *A N*, connected by two ends *C C*, the frame being made from wire bent into the required shape, as seen in Fig. 5, the two ends of the wire preferably brought together upon the upper side *B* and inclosed by a tubular clip as a means for securing the two ends together and as usual in this class of buckles. The lower side of the frame is preferably bent to form a depending hook *a*, as usual in this class of buckles; but for this depending hook other engaging devices for the suspender-ends may be substituted. The ends of the frame are bent backward midway of their length, as at *b b*, so as to make a slight offset on the front of the face of the frame of substantially the thickness of the sheet-metal bar to be attached to the frame. Midway of this depressed portion of the ends a U-shaped forward bend *d* is formed and so as to produce pivot-bearing recesses *e* on the rear side of the frame, as clearly seen in Fig. 6.

D represents the bearing-bar, which is made from sheet metal cut from a blank, as seen in Fig. 8. This bar is best made of substantially V shape, as seen in Fig. 8, the angle being slight. The width of this bar at the ends corresponds to the width of the depressions formed in the ends of the frame, and the blank for the bar is constructed with longitudinal tongues *f* at each end distant from each other and so as to leave a recess *g* at the ends corresponding to the length of the bends *d* on the ends of the frame, and the bar is of a length so much greater than the length of the frame as to permit a rearward bend to be made near the end of the frame, so as to produce an offset *h* at each end of the bar, as seen in Fig. 7. The length between the offsets corresponds substantially to the length of the frame between the two ends. The upper or V-shaped edge of the bar is preferably toothed or serrated and is turned forward to form an outwardly-projecting jaw *i*. The bar is applied to the frame so as to bring the recess *g*

of the ends of the bar onto the bends d , and the tongues i are closed around the ends of the frame in the depressed portion and at each end of the bend d , as clearly seen in Figs. 1 and 2. The placing of this bar upon the frame and bending the tongues around the frame, as described, brings a portion of the bar over the openings e on the frame and so as to close those openings to complete the lever-pivot bearings.

The lever is made from wire, preferably doubled to form a loop or handle E , (see Fig. 9,) adapted to embrace the depending hook a of the frame. The branches of the wire above the loop are turned to the right and left to form the jaw F , and these bends correspond to the shape of the bar. If the bar is V-shaped or inclined from the face toward the center, as shown, the branches forming the jaw will be inclined accordingly, as seen in Fig. 9. At the ends of the jaw the branches are turned forward to form offsets G in a horizontal plane, and then the ends are turned outward to form pivots H in line with each other. The length of the jaw between the offsets G corresponds substantially to the distance between the ends of the frame, and the pivots are adapted to enter the seats e in the frame, as shown. The extent of the offsets G in the lever corresponds to the offsets in the bearing-bar, so that the jaw portion of the lever projects toward the bearing-bar and operates like a cam and so that when the lever is turned downward, as represented in Fig. 4, the jaw will impinge upon the suspender and clamp it against the bearing-bar; but when the lever is turned outward, as represented in broken lines, Fig. 4, the jaw will be turned downward away from the suspender and bearing-bar, as represented in broken lines, Fig. 4, so as to leave the suspender free for adjustment. The length of the loop E of the lever is somewhat less than that of the depending hook, and the shape of the loop is such as to permit the loop to pass rearward over the hook, as seen in Figs. 2 and 3. The jaw portion of the lever because of being unsustained other than by the strength of the wire itself and that wire being elastic will yield downwardly as the loop passes over the hook and so as to react as the loop passes beyond the bend of the hook, and thereby raise the loop above the bend of the hook, as represented in Figs. 2 and 4, thus interlocking the lever with the hook when the jaw is in the clamping position. This loop also serves as a guard to prevent the accidental detachment of the suspender-ends, as usual in this class of lever-loops. By this construction of the lever a considerable elasticity is permitted the lever, so that it is adapted to yield to different thicknesses of suspenders and yet make firm grasp of the suspender against the clamping-jaw, as well as to yield for the interlocking of the loop with the hook, as described.

It is not essential to the invention that the

lever shall be constructed so as to form a loop to embrace the hook, as it may be made, as represented in Fig. 10, to simply form a handle. The V shape of the jaw portion of the lever has a great advantage over such a jaw made straight. The diagonal shape of the jaw produces an engagement between the jaw and the suspender practically over so much greater length of the suspender than it would do if the jaw were straight as the extent of the inclination, and so that the diagonal hold of the jaw is very considerably greater than it would be with the straight jaw; but it may be straight, as seen in Fig. 10.

While preferring the construction of the pivot-bearings as I have described by making the U-shaped bends in the ends of the frame and covering the open side of the bends with the bearing-bar, the pivot-bearings may be made as seen in Fig. 11. In this case the ends of the bearing-bar are turned forward through recesses formed in the ends of the frame and so as to produce projecting ears forward of the frame, and these ears are pierced to receive the pivot ends of the lever. The same advantage which is attained by the offsets in the lever is found in this construction, substantially as in the first illustration.

I claim—

1. A buckle having the frame made from wire composed of two sides and two ends, a bearing-bar longitudinally across the frame and secured at the two ends of the frame, a lever made from wire doubled to form the loop or handle of the lever, and the two branches turned to the right and left and at the ends offset in a horizontal plane, the extreme ends of the offsets turned to the right and left to form pivots by which the lever is hung to the frame, substantially as described, and whereby the jaw portion of the lever is made elastic.

2. A buckle consisting of a frame, with a bearing-bar extending across the frame, the bar offset rearward between the ends of the frame, combined with a lever made from wire bent at the center to form a handle, the two branches turned to the right and left from the said handle and in diagonal lines from each other, so as to produce substantially a V shape, the said branches bent forward near their ends to form offsets G in a horizontal plane and the extreme ends from these offsets turned to the right and left and into line with each other to form pivots H , the said lever hung in the said frame by the said pivots, and whereby the said diagonal branches of the lever offset from the pivots is adapted to impinge upon the bearing-bar, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DWIGHT L. SMITH.

Witnesses:

JAMES STOVELL,
ALBERT D. SMITH.