(No Model.)

C. VOORHIS.

SUSPENDER BUCKLE.

No. 382,199. Patented May 1, 1888.

Fig. 1.

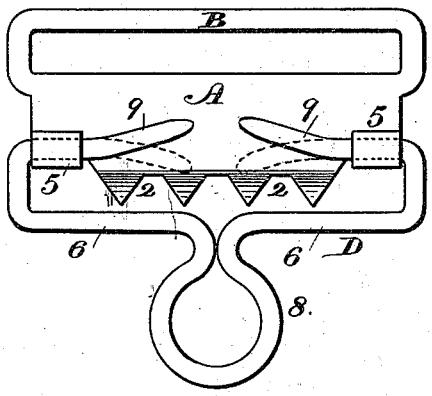


Fig. 2.

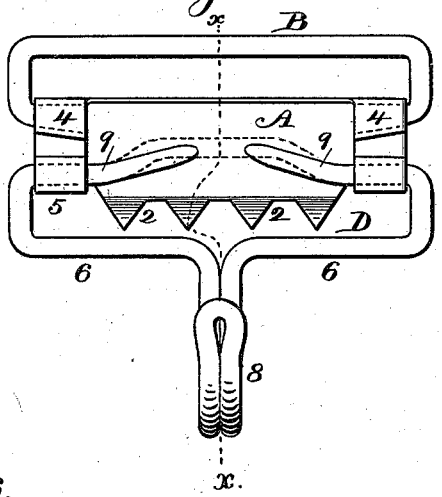


Fig. 6.

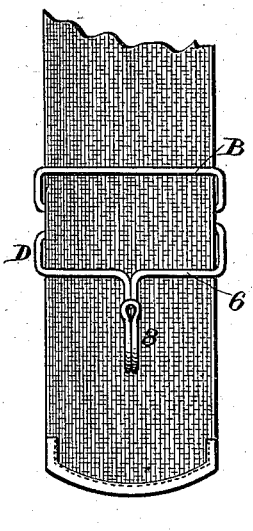


Fig. 3.

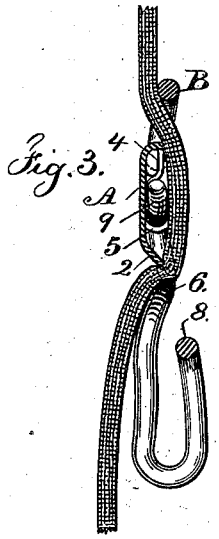


Fig. 5.

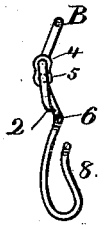
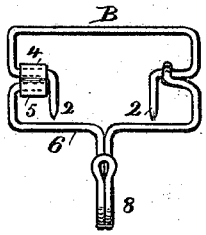


Fig. 4



Witnesses.

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UNITED STATES PATENT OFFICE.

CALVIN VOORHIS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND ABRAHAM SHENFIELD, OF SAME PLACE.

SUSPENDER-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 382,199, dated May 1, 1888.

Application filed February 10, 1888. Serial No. 263,573. (No model.)

To all whom it may concern:

Be it known that I, CALVIN VOORHIS, of the city and State of New York, have invented an Improvement in Buckles for Suspenders, of which the following is a specification.

Buckles for suspenders have been made by stamping the same in one piece from sheet metal. Such buckles have usually had a transverse slot adjacent to the upper edge of the plate and a similar slot parallel to it and adjacent to the lower edge of the plate. The upper edge of the lower slot had teeth formed on it, the points of which were bent forward, so as to project beyond or in front of the face of the plate. While a buckle of this description securely holds to a suspender to which it is attached, yet it is a matter of great difficulty and annoyance to alter its position upward or downward on the suspender. To obviate this very objectionable feature in an efficient and economical manner is the object of the present invention.

In the drawings, Figures 1 and 2 are elevations in large size of the buckle in slightly different forms. Fig. 3 is a section with the suspender in place. Fig. 4 is an elevation, and Fig. 5 a section, of a modification of the buckle; and Fig. 6 shows the buckle and suspender.

I construct my buckle with a main plate, A, having a slot at or adjacent to its upper edge formed by the separate loop B, Fig. 2; or the slot may be cut in the plate, leaving the bar or loop B, Fig. 1.

Where the separate wire is made use of, the ends are attached to the upper edge of the plate by the bent tongues or clips 4, Fig. 2. The middle portion of the lower edge of the plate has teeth 2 formed in it, which are bent forward at an angle of about forty-five degrees, so that the points of the teeth stand well in front of the face of the plate. A sufficient portion of the edge of the plate is left at the ends of the row of teeth to form tongues, which are bent up into eyes or bearings 5. Through these eyes the ends of another loop, D, pass, said ends being bent inward toward each other. The main portion of this lower loop, D, beneath the teeth is bent in such a manner that it forms a cross-bar, 6, parallel and adjacent to the teeth. The central portion of this bar is formed into a ring or hook, 8, to which the suspender-end may be attached. It is preferable, although not necessary, that the ends 9 of this lower loop, D, which are between the two eyes or journals 5, be bent or curved slightly out of line with each other—upward if at the front of the plate, as seen in full lines in Fig. 1, or downward if at the rear of the plate, as seen by the dotted lines, Fig. 1. These bent ends form springs which become operative when the loop is moved or swung out of the plane of the plate, to tend to force such loop back again into line with the plate. By this means the web or strap which lies in front of the teeth is forced by the cross-bar 6 of the loop against the points of the teeth, causing them to penetrate the fabric. At the point of penetration the web or strap, by the action of the loop and projecting teeth, is bent backward at a right angle to itself, or nearly so, and any strain brought to bear on the buckle while in that position tends to embed the teeth more firmly and deeply into the fabric. Above the point at which the teeth penetrate the web passes through the upper loop or slot to the rear of the buckle. Consequently the top bar of the loop B lies against the face or front of the suspender and resists any tendency of the latter when under strain to draw the toothed edge of the plate out of its proper position relative to the lower loop. Instead of bending the ends of the lower loop into springs, the main bar of the loop may be curved either upward or downward, as shown by the dotted lines in Fig. 2, and pass through the lower eyes, either on the front or rear of the plate A, and the ends of the wire loop are carried downward to be attached to or formed into a connecting ring or hook for the suspender-end. In each instance mentioned the spring will operate in like manner to force the lower part of the loop into its proper position below and adjacent to the teeth. A sheet-metal plate in connection with the loops may be dispensed with, and the ends of the upper loop, after being inwardly bent, may be bent downward and form the teeth, as seen in Figs. 4 and 5, the points of which are bent forward at about the same angle as those on the plate before mentioned, and the ends of the lower loop may be bent at right

angles to form the pivots corresponding with and parallel to those on the upper loop, and joined together by small sheet-metal loops or double or single eyes around the respective parts, thus hinging them together. The lower loop, instead of being bent at right angles, may have eyes formed thereon to encircle the corresponding part of the upper loop and form pivots or hinges.

It is to be noticed that in ordinary buckles the ends of the teeth press upon the plate or cross-bar, while in my improvements hereindescribed the teeth do not come into contact with the cross-bar of the buckle-loop, but pass clear of them in all the movements, and the suspender-strap when bent around the teeth is held by the angle in which the suspender is bent, and not by the penetrating-points coming against a cross-bar. To change the position of the buckle on the suspender, it is only necessary to swing the lower loop, D, slightly upward to the front, or press the plate slightly backward, when the teeth will be disengaged and the buckle may be freely raised or lowered on the strap. Is is advisable, also, when placing the buckle on the suspender to turn the lower loop into a position at right angle to the face of the plate, as in that position the springs are inoperative and the loop remains as placed, offering a free passage to even the thickest web without allowing the teeth to retard it in any way.

I am aware that buckles have been made with upper and lower slots separated from each other by a toothed bar; but such slots were always in a fixed position to each other. I am also aware that buckles have been made of two wire loops joined or hinged together by eyes; but in this case the extremities of the lower loop are turned upward to form teeth, the points of which when in use lie against the bar of the upper loop; also, that in Patent No. 365,713 spring-loops are described which connect and force two plates against each other. Neither of these features do I claim broadly; but

I do claim—

1. In a buckle, the combination, with the main plate A, having a transverse slot and loop, B, at its upper edge, through which the suspender-web or other material passes, and teeth 2 and eyes or journal 5 at lower edge, of a swinging loop, D, pivoted to said plate, so that the main bar of said swinging loop D is parallel with and adjacent to the points of said teeth, and through which loop the suspender-web or other material passes, substantially as set forth.

2. The plate A, having teeth and eyes or journals 5 at its lower edge, in combination with the loop D, having a cross-bar, 6, adjacent to the teeth 2, the ends of said cross-bar 6 passing through the eyes or journals 5 and bent or curved at 9 to form springs, and the loop B at the upper part of the plate A, substantially as set forth.

3. The plate A, having loop B at the upper edge, and teeth and eyes or bearings at the opposite edge, in combination with the loop D, which is curved to form spring 9, and suspended by the eyes or journal 5, substantially as set forth.

Signed by me this 8th day of February, 1888.

CALVIN VOORHIS.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.