

(No Model.)

H. P. RICHARDS.
SUSPENDER BUCKLE.

No. 476,172.

Patented May 31, 1892.

Fig. 1

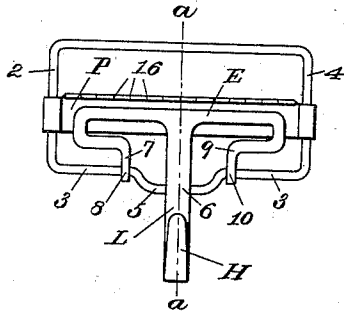


Fig. 2

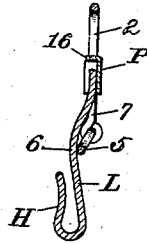


Fig. 3

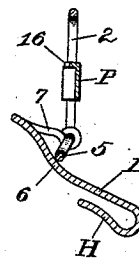


Fig. 4

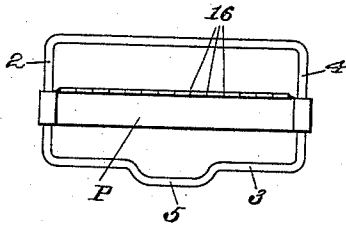


Fig. 5

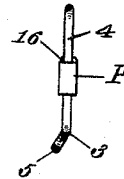


Fig. 7

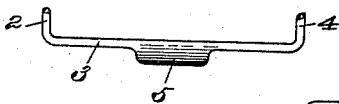
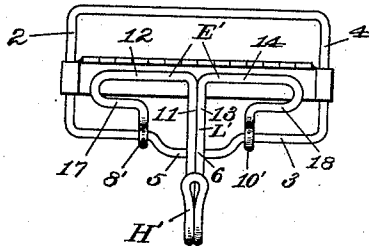


Fig. 6



Witnesses:

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UNITED STATES PATENT OFFICE.

HUBERT P. RICHARDS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
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SUSPENDER-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 476,172, dated May 31, 1892.

Application filed August 17, 1891. Serial No. 402,936. (No model.)

To all whom it may concern:

Be it known that I, HUBERT P. RICHARDS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Suspender-Buckles, of which the following is a specification.

This invention relates to that class of suspender-buckles in which the web-clamping lever is usually pivotally supported at the lower side of the frame, the object being to furnish a buckle of that class in which the clamp-lever shall be normally held closed by means of a cam acting upon said lever.

In the drawings accompanying and forming a part of this specification, Figure 1 is a front view of a grip-back buckle embodying my present invention. Fig. 2 is a vertical sectional view of the buckle in line *a a*, Fig. 1, the clamp-lever being shown closed. Fig. 3 is a view similar to Fig. 2, showing the clamp-lever opened. Fig. 4 is a front view, and Fig. 5 an edge view, of the buckle-frame. Fig. 6 is a view similar to Fig. 1 of a modified construction of the buckle. Fig. 7 illustrates a modified construction of the frame-cam of the buckle.

Similar characters designate like parts in all the figures.

The improved buckle herein shown consists of a buckle-frame provided with the usual web-engaging back plate or grip-back for supporting and engaging the suspender-web and a clamp-lever pivotally supported on the frame below the back plate thereof. The clamp-lever is or may be of the general construction described in the prior Letters Patent of the United States, No. 451,840, granted to George B. Pilkington May 5, 1891, said clamp-lever, as shown in said patent, being formed of a single piece of wire bent to the required shape. This form of wire clamp-lever is also shown in Fig. 6 of the drawings of this specification. The clamp-lever may, however, be formed of a piece of sheet metal or of a light casting, as illustrated in Figs. 1, 2, and 3 of this specification. When said lever is constructed of wire, as described in the aforesaid Letters Patent, it consists of a lever-arm *L'*, comprising two sides 11 and 13, which are shaped at their

lower ends to form the hook *H'*, whereon the usual cast-off ring of a suspender may be supported, the oppositely-extending arms or bars 12 and 14 of the sides 11 and 13, respectively, together forming a clamp-bar, (designated in a general way by *E'*), and the downwardly-projecting bearing-arms 8' and 10', (sometimes connected to the clamp-bar by the intermediate portions 17 and 18, respectively,) which at their lower ends have suitably-formed eyes that close over the lower portion of the frame, whereby the lever is pivotally supported on the frame.

In the form of buckle shown in Figs. 1, 2, and 3 the clamp-lever is supposed to be constructed integral and to consist of a suitable casting—as, for instance, light malleable iron—of substantially the form illustrated. It may also in some cases, if desired, be formed of suitable sheet metal properly stamped into the required shape. Said clamp-lever consists of the clamp-bar *E*, carrying at the ends thereof the bearing-arms 7 and 9, which terminate in the eyes 8 and 10, respectively journaled on the lower bar 3 of the buckle-frame, and the depending lever-arm *L*, extending below the buckle-frame and having at its lower end means for carrying the suspender-end. As herein shown and described, said suspender-end-carrying means consists of the ordinary hook *H*, formed on the lever *L* at the lower end thereof in a well-known manner.

The buckle-frame consists, essentially, of a suitable back plate, as *P*, usually furnished on its upper edge with a rib or with the forwardly-projecting teeth 16 for engaging the web (not shown) of the suspender in a well-known manner, and a lower bar 3 for carrying the clamp-lever, which lower bar is connected to the ends of the back plate by means of the two side bars 2 and 4. Said lower bar midway of the length thereof is provided with the cam-like portion 5, which I designate as the "frame-cam" and which projects a short distance, substantially as shown, from the line of the lower bar 3. This cam or lever-engaging arm bears against a suitably-formed portion 6 of the clamp-lever arm *L*, which portion 6 (properly designated as the "cam-bearing

ing") on the swinging movement of the lever-arm coacts with said part 5, after the manner of a cam, to resist said opening movement and thus furnish the means for normally and
 5 yielding holding the clamp-lever in the closed position illustrated in Fig. 2. The degree of said resistance may be regulated by properly graduating the proportions of cam 5 and the cam-bearing 6.
 10 The opening movement of the clamp-lever from the position shown in Fig. 2 to that shown in Fig. 3 acts to spring or distort the lever, as will be understood by comparison of the positions in said figure of said lever relatively to
 15 the bearing-arm 7, which arm, together with the end portions of the clamp-bar E, constitute in effect torsion-springs for maintaining the proper action of the buckle and in connection with said cam-arm 5 to yieldingly
 20 lock the clamp-lever closed.
 The operation of my improved buckle will be understood from the drawings, in connection with the preceding description. When the buckle is opened, as in Fig. 3, the sus-
 25 pender-web may be slipped into place in the usual manner and held therein by closing the clamp-bar to the position shown in Fig. 2. When it is required to release the web, the user, seizing the lever L, forcibly swings the
 30 said lever from the position shown in Fig. 2 to the position shown in Fig. 3, in which lat-

ter position said frame-cam stands in substantially its "dead-center" position, wherein it will remain until further moved by hand or closed.

Having thus described my invention, I
 35 claim—

1. In a grip-back buckle, the combination, with a buckle-frame, substantially as described, having in the lower bar thereof the
 40 frame-cam 5, of a buckle-lever, substantially as described, journaled on said lower bar and having a grip-bar and a lever-arm constructed with a cam-bearing coacting with said frame-cam for closing the lever, substantially as set
 45 forth.

2. In a grip-back buckle, the combination, with the wire buckle-frame carrying on the sides thereof a back plate and having the
 50 lower bar thereof below said back plate bent downwardly in its middle portion to form the frame-cam 5, of the clamp-lever consisting of a clamp-bar having downwardly-extending arms journaled on said lower bar and having
 55 a strap-carrying lever-arm constructed with a cam-bearing midway of the length thereof and coacting with said frame-cam for closing the lever, substantially as set forth.

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