(No Model.) 2 Sheets—Sheet 1.

D. L. SMITH.

BUCKLE.

No. 478,826. Patented July 12, 1892.

Fig. 1

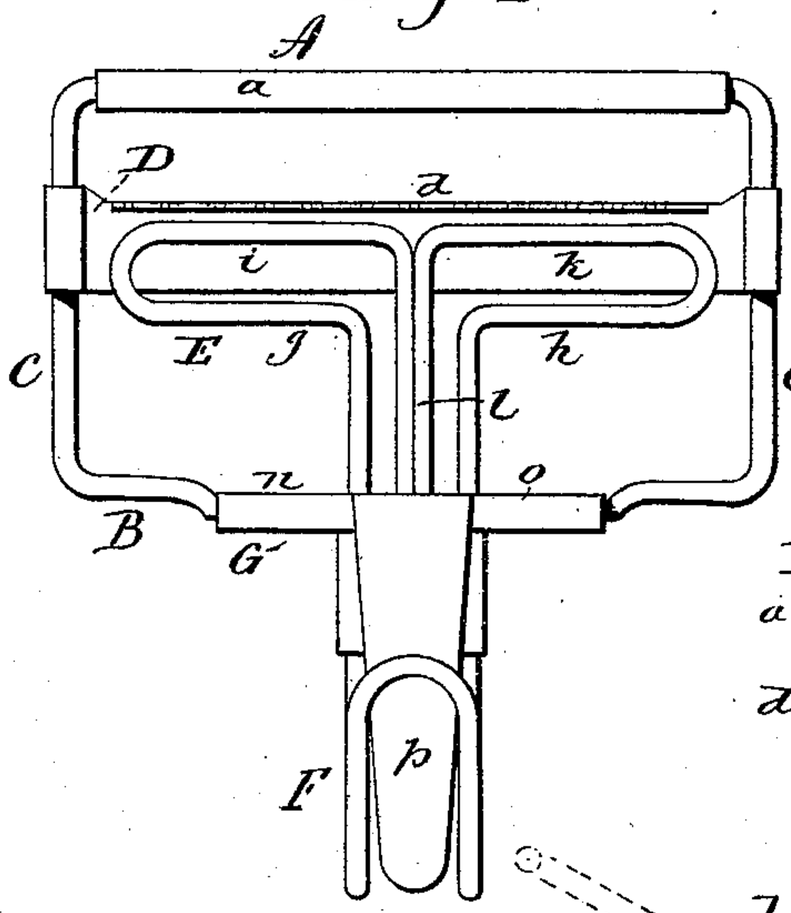


Fig. 2

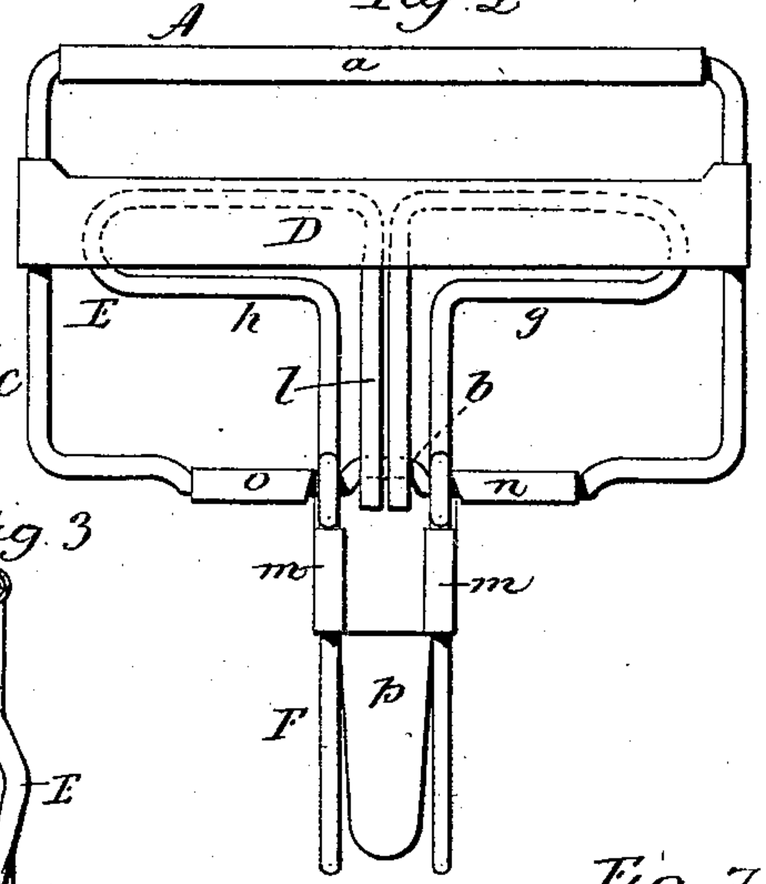


Fig. 3

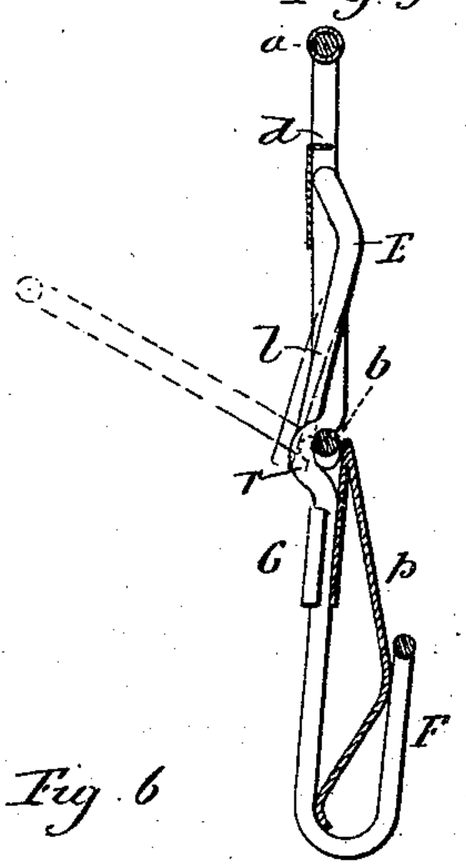


Fig. 4

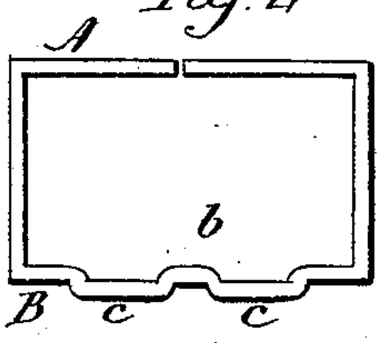


Fig. 5

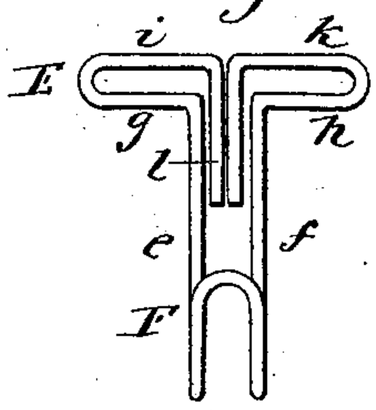


Fig. 6

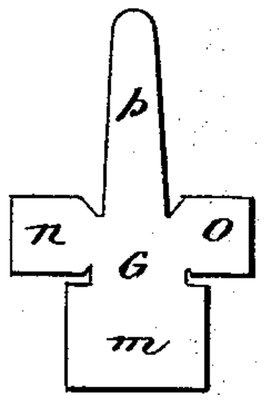


Fig. 7

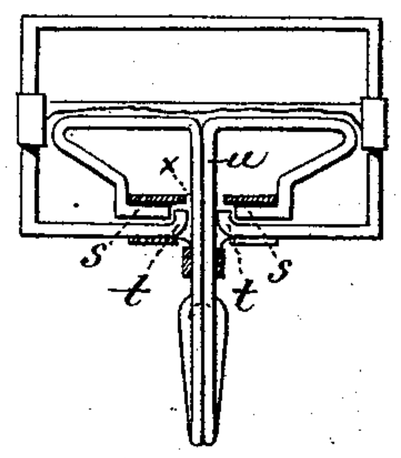
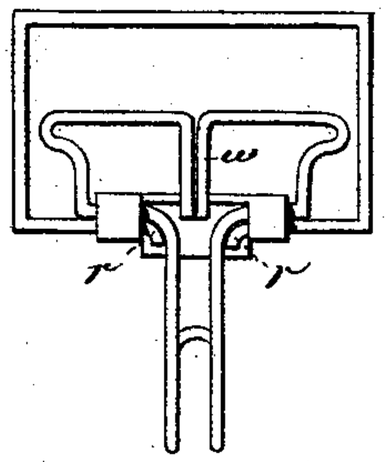


Fig. 9



Witnesses
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Lillian D. Kelsey.

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Earle Seymour

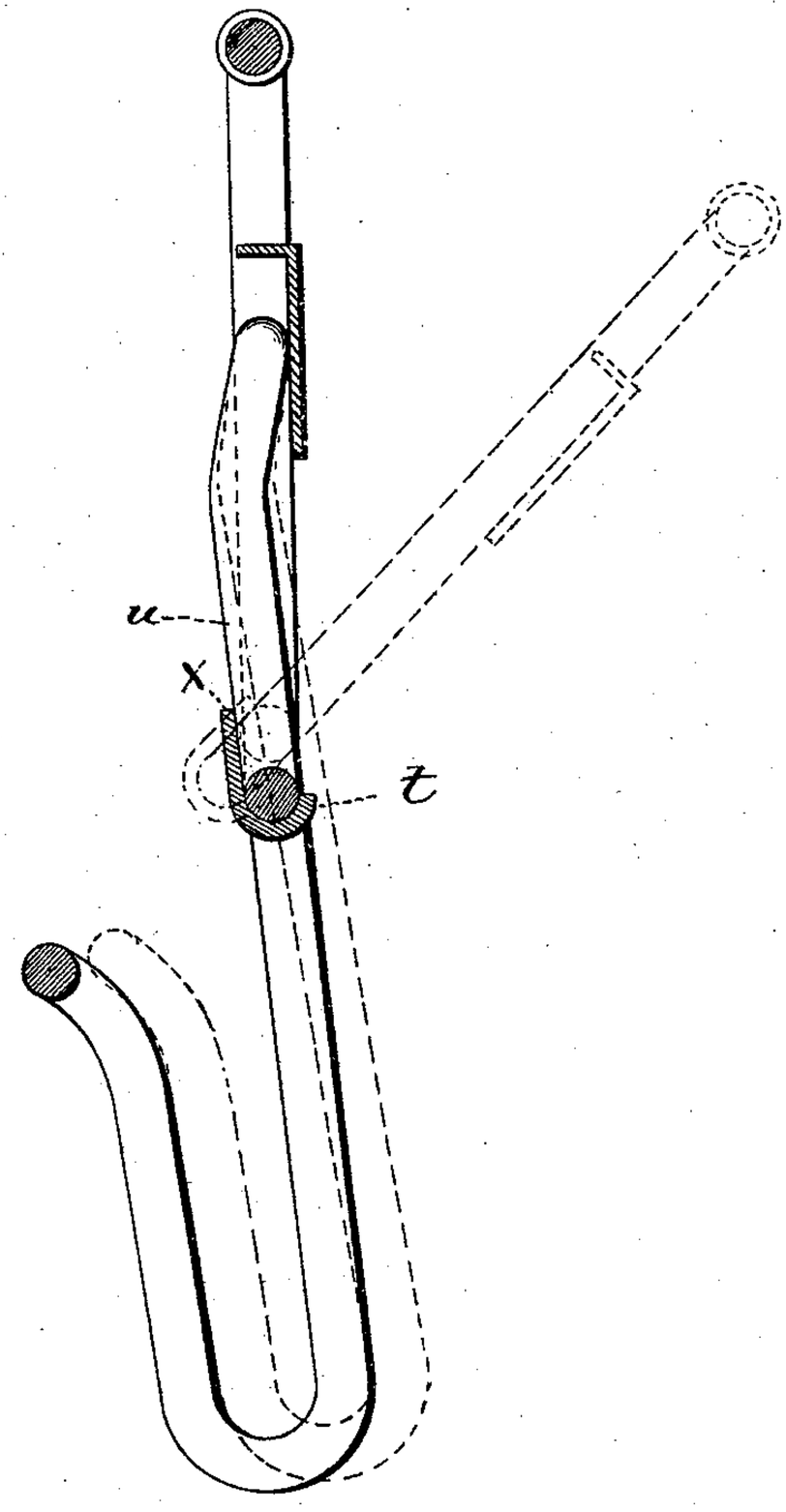
(No Model.) 2 Sheets—Sheet 2.

D. L. SMITH.

BUCKLE.

No. 478,826. Patented July 12, 1892.

Fig. 8



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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. 478,826, dated July 12, 1892.

Application filed March 28, 1892. Serial No. 426,768. (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 complete; Fig. 2, a rear view of the same; Fig. 3, a vertical central section; Fig. 4, the frame detached; Fig. 5, the jaw detached; Fig. 6, the blank from which the hinging-clip is formed; Fig. 7, a rear view of a buckle, showing modifications in the construction and hinging of the jaw; Fig. 8, a vertical central section of the same, enlarged; and Fig. 9, a rear view of a buckle, showing another modification.

This invention relates to an improvement in the construction of buckles such as designed especially for suspenders, and particularly to that class in which a presser-bar is arranged longitudinally across the frame, combined with a jaw or lever hinged to the frame, the said jaw or lever being parallel with the said bar, and so that the jaw of the lever may be closed upon the suspender introduced between the presser-bar and the jaw—a common and well-known class of buckles—the object of the invention being to construct the jaw-lever from wire and provide it with a spring, the tendency of which shall be to yieldingly hold the jaw in the closed or engaging position; and the invention consists in the construction, as hereinafter described, and particularly recited in the claims.

The frame is composed of an upper side A, lower side B, and two ends C C, made from wire, the ends of the wire preferably meeting upon the upper side and inclosed by a sheet-metal tube or clip *a*, as usual in wire buckles. The lower bar B is bent, so as to throw the center portion *b* upward, as seen in Fig. 4, and out of line with the adjacent portions *c c* of that side. Longitudinally across the frame is a sheet-metal or other suitable presser-bar D, secured to the two ends of the frame in the usual manner, and, as usual, or preferably, the upper edge of the bar is turned forward to form a toothed flange *d*. (See Fig. 3.)

E represents the swinging jaw, which is hinged to the lower side of the frame and so as to bear against the presser-bar or upon the suspender or strap which may stand between the presser-bar and the jaw. The jaw is made as a part of a depending hook F, and the jaw with the depending hook is made from a single piece of wire doubled at the center, forming two branches *e f*, (see Fig. 5,) which extend upward, and then turned to the right and left, as at *g h*, to the required length for the jaw, and then returned inward, as at *i k*, the two parts meeting at the center and there turned downward between the two branches *e f*, as clearly seen in Fig. 5, to form a spring *l*, which normally stands substantially in the plane of the back of the depending hook. The double of the wire at the center is bent upward to form the hook F, as seen in Figs. 1 and 3. To the two branches *e f* a sheet-metal clip G is applied. This clip is made from a blank, as seen in Fig. 6. The part *m* of this clip is closed around the two branches *e f* above the hook, and the transverse tongues *n o* are closed around the lower side of the frame at each side of the upward projection *b*, thus hinging the lever or jaw to the lower side of the frame and so that the two parts may swing the one from the other, as represented by broken lines in Fig. 3.

As here represented, a spring-tongue *p* for the hook is made as a part of the clip, the tongue bent outward and downward and turned within the bend of the tongue, as seen in Figs. 1, 2, and 3, so as to serve as the guard for the hook to prevent the accidental escape of the loop, which may be placed therein. The two branches of the lever or jaw portion are bent, as at *r*, Fig. 3, at the point where it passes the lower side of the frame, which forms a recess in the lever or jaw portion, into which the lower side of the frame may rest. The jaw-spring *l* normally lies upon the back of the projection *b*, as seen in Fig.

3, it being thrown rearward out of its normal plane when hinged to the side of the frame, so that the spring bears with some pressure against the projection *b*. This bearing being above the axis on which the jaw or lever is hinged, the tendency of the spring is to hold the jaw in the closed position, but yet permit the two parts to be turned one from the other, and in so turning the one part from the other—as, for illustration, the frame from the lever or jaw, as seen in broken lines, Fig. 3—the projection *b* of the frame operates against the spring *l* as a cam, and in the opening movement forces that spring farther out of its normal plane, as indicated in broken lines, Fig. 3, increasing the resistance to the opening movement, and the spring thus applied to the cam has a tendency to return the frame and jaw to the closed position when left free so to do.

Instead of making the cam as a part of the frame it may be made as a part of the clip, as seen in Figs. 7 and 8, (*x* representing the cam.) As shown, the lever is constructed with pintles *s s*, which are placed parallel with but above the lower side of the frame, and then the clip closed around the pintle and that side of the frame. In this case the frame is divided upon the lower side and the two ends at the center are turned upward, as at *t t*, so as to leave a space between them, and these two turned-up ends hold the clip upon the frame, so that the clip cannot turn upon the side of the frame, the turning-point between the two parts being the pintles *s s*. The front or cam portion *x* of the clip at the center bears against the spring portion *u* of the jaw and serves as the cam, so that when the two parts are turned from each other and upon the pintles *s* the cam bears upon the spring *u*, as in the first illustration, the operation of the spring being the same in this case as in the first.

In the modification shown in Fig. 7 the two branches of the bent wire extend upward and are turned to the right and left to form the jaw proper, then returned inward and downward, the ends bent inward at the center to form the pintles, as clearly shown in Fig. 7; or instead of turning the ends of the frame upward, as at *t t*, Fig. 7, they may be turned downward, as at *v v*, Fig. 9. In this illustration a different form of bend of the wire is shown to produce the jaw-lever, clearly apparent in the drawings without further description. The spring *w* of the jaw is operated by a cam formed as a part of the clip in substantially the same manner as that shown in Fig. 7.

From the foregoing it will be understood that while preferring the cam formed by a bend in the lower side of the frame or that part of the frame to which the jaw is hinged the invention is not to be understood as limited to any specific construction of the cam or any specific bend of the wire to produce the spring as a part of the jaw.

In the illustration the bar to which the jaw is hung is represented as being the lower side of the frame; but it will be understood that the position of the hinging-bar is immaterial, it only being essential that it shall be parallel with the presser-bar.

While the spring serves to yieldingly hold the jaw in the closed position, it also serves the important advantage of enabling the two parts to be held in the open position for the introduction of the suspender, as represented in broken lines, Fig. 3. In this position the cam stands at substantially right angles to the spring, and consequently there is no tendency of the spring to force the jaw or frame in either direction.

I do not claim, broadly, a buckle having a frame made from wire with a cross-bar between its upper and lower sides, combined with a lever made from wire hinged to the lower side of the frame, the wire bent to form a jaw to grasp the suspender against the cross-bar, as such I am aware is not new.

I claim—

1. A buckle composed of a frame having a longitudinal presser-bar, combined with a jaw hinged to a part of the frame parallel with the said presser-bar and so as to swing toward and from the presser-bar, the jaw constructed with a spring extending toward the hinging-point of the lever at substantially right angles to the line of the jaw, and a cam on the bar or side of the frame to which the jaw is hung, the cam being in substantially the plane of the frame, but out of line with the axis of the hinge on which the jaw swings, substantially as described.

2. A buckle composed of a frame having a longitudinal presser-bar, a side or bar of the frame parallel with the presser-bar, bent to form a cam in substantially the plane of the frame, but out of line with the bar of which it forms a part, a jaw made from wire bent to form the longitudinal jaw to bear upon the said presser-bar, with a central projection therefrom toward the said side or bar of the frame carrying the said cam, and the jaw hinged by the said projection to the said cam-bar of the buckle, the axis of the said hinge being out of line with said cam, and the jaw constructed with a spring adapted to bear upon said cam, substantially as and for the purpose described.

3. A buckle composed of a frame made of wire and consisting of two sides A B, ends C C, a presser-bar D, longitudinally across the frame and secured to the two ends thereof, combined with a jaw made from wire, the wire doubled and bent to form the depending hook F, the two branches of the wire extending upward and turned to the right and left and returned inward to form the jaw, the ends of the wire at the center turned

downward to form a spring *l* between the two branches, the jaw hinged to the lower side of the frame, and the lower side of the frame constructed with a cam *b*, against which the said spring *l* is adapted to bear, substantially as and for the purpose described.

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

DWIGHT L. SMITH.

Witnesses:
FRED. C. EARLE,
LILLIAN D. KELSEY.