(No Model.)

# F. H. RICHARDS.

## SUSPENDERS.

No. 446,840. Patented Feb. 17, 1891.

*Fig. 1*

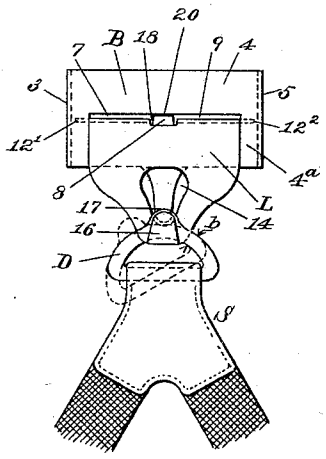



*Fig. 2*

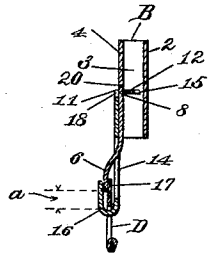



*Fig. 4*

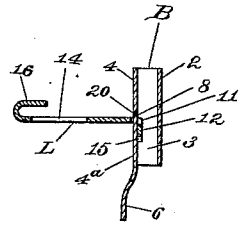



*Fig. 3*

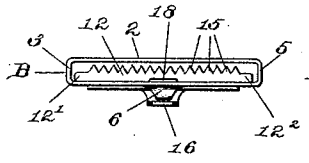
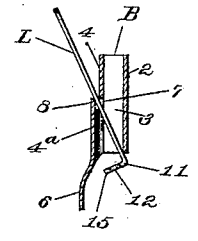



*Fig. 5*




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# UNITED STATES PATENT OFFICE.

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## SUSPENDERS.

SPECIFICATION forming part of Letters Patent No. 446,840, dated February 17, 1891.

Application filed August 16, 1890. Serial No. 362,231. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, 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 buckles having "cast-offs," the object being to provide an improved buckle in which the buckle is locked closed by the cast-off device.

In the drawings accompanying and forming a part of this specification, Figure 1 is a front view of a buckle embodying my present improvements. Fig. 2 is a central vertical section of the same. Fig. 3 is a top view of the buckle shown in Figs. 1 and 2. Fig. 4 is a sectional view similar to Fig. 2, showing the buckle-plate unlocked and open. Fig. 5 is a view similar to Fig. 4, showing the mode of inserting the lever-plate.

Similar characters designate like parts in all the figures.

My improved buckle consists of three principal parts: the frame, the lever-plate, and the cast-off ring. In the particular form of buckle shown in the drawings the frame B consists of the back plate 2, the front plate 4, the ends 3 and 5, and the arm 6 for locking the lever-plate. The front and back plates 2 and 4, together with the ends 3 and 5 of the frame, form a short tube, which may be integral, as herein shown, or may be composite, according to the preference of the manufacturer. In the front plate 4 there are formed two slots 7 and 9, which are in alignment, and together constitute the lever-plate slot. Intermediate of the length of said lever-plate slot there is a projection or stop 8, which projects from one side of said slot and stands contiguous to the other side thereof, but separated from said other side, as indicated at 20 in the drawings. The lever-plate L is bent at 11 to form the inwardly-turned end 12, which is provided with the teeth 15 for engaging the web of the suspender and is widened on either side thereof, as at 12′ and $12^2$, Fig. 3, to form in part the pivotal connection between the lever-plate and frame B. The lever-plate extends downward from the line of its pivot, and has on the lower end thereof the strap-supporting hook 16, and above said hook has the space 14, through which the aforesaid arm 6 projects. This will be seen by comparison of Figs. 1 and 2. Between the lower end of said arm 6 and the inner side of the hook 16 there is a space *a*, which is slightly greater than the width at *b* of the cast-off ring D. This ring D has connected thereto the usual suspender-end S, and has at the upper side thereof an enlargement or widened portion 17, which normally rests on the hook 16 and extends upward between the lever-plate and the arm 6, as indicated in Fig. 2, thereby securely locking the lever-plate closed.

In the lever-plate, at the bend 11 thereof, corresponding in lateral position to the aforesaid stop 8, there is a mortise or perforation 18 formed in said plate, and through which said stop extends. When about to assemble the several parts of the buckle and before the hook 16 is bent up into shape, the lever-plate is inserted through the pivot-slot, as shown in Fig. 5, the lower part 4′ of the plate 4 being thrown forward, so that the lever-plate will pass through said slot under said stop 8. When the lever-plate has been slid entirely through its pivot-slot, the plate 4′ immediately springs back to its normal position, (shown in Figs. 2 and 4,) when the stop 8 falls into said mortise 18, and thus locks the lever-plate securely in place. After this the hook 16 is formed, thereby completing the buckle ready for use.

In operating the buckle the user, taking hold of the suspender-end, carries the ring D around, as indicated by dotted lines in Fig. 1, until the enlargement 17 is wholly at one side of the point of the arm 6, when the lever-plate and said ring may be drawn forward together until the ring stands forward of said arm 6, and is then free to be lifted off from the hook 16. In replacing the ring D this operation is reversed, as will be readily understood.

Having thus described my invention, I claim—

1. In a buckle, the combination, with a buckle-frame having a pivot-slot, substantially as described, of the bent lever-plate pivotally supported at the bend thereof in

said slot and having therein a mortise at the bend of said plate in said slot, and a stop formed on the frame at one side of the slot and projecting thereinto, whereby the lever-plate is locked in place by said stop engaging the lever-plate mortise.

2. In a buckle, the combination of the tubular buckle-frame having the lever-plate pivot-slot and having a stop projecting into said slot from one side thereof, the part of the buckle-frame carrying said stop being of spring metal adapted to be sprung out of the normal plane thereof, and the lever-plate passing through said pivot-slot and having a bend therein, the lever-plate being widened within the buckle-frame to form in part the the lever-plate pivot and having a mortise at the bend thereof for engaging said buckle-frame stop, whereby the pivotal connection of the lever-plate is completed, and whereby the buckle-frame and lever-plate may be assembled by the method described.

3. In a buckle, the combination of the buckle-frame having the buckle-plate pivotally carried thereby and having a depending arm, said buckle-plate having an opening corresponding to said arm and having a hook below the end of said arm and projecting above the same, and the cast-off ring having its sides narrower than the space between the hook and the end of the buckle-frame arm and having the upper portion of its rim wider than said space, whereby said widened part of the cast-off ring may be inserted between the lever-plate and buckle-plate arm for locking the lever-plate closed.

4. In a buckle, the combination, with the buckle-frame having the pivot-slot and a downwardly-projecting arm, and having a stop, substantially as described, in said slot, of the lever-plate pivoted in said slot and engaging said stop, whereby said lever-plate is held in place, said lever-plate having an opening for said projecting arm and below said opening a hook, substantially as described, and the cast-off ring for locking the lever-plate closed by engaging between said plate and arm above said hook.

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