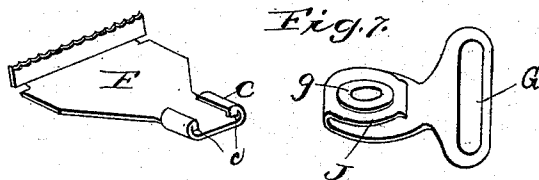
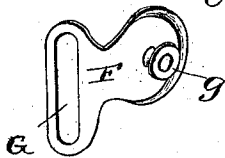
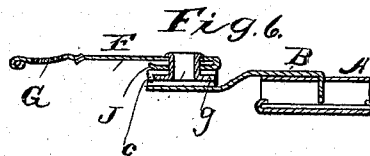
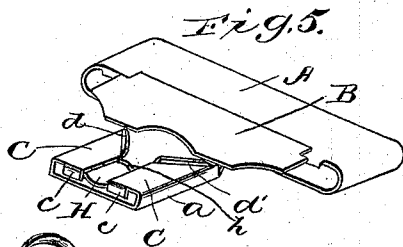
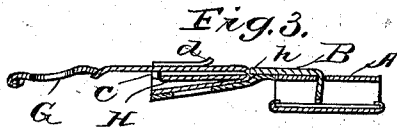
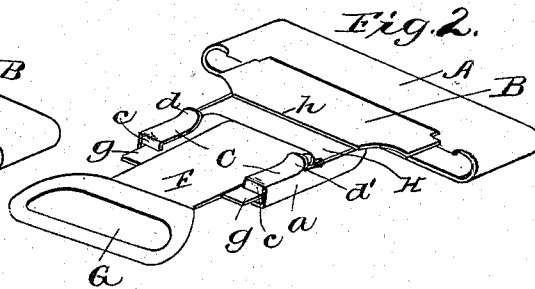
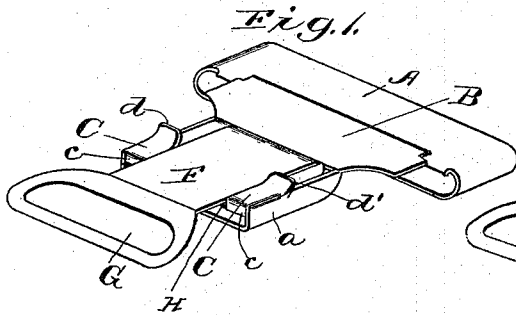


(No Model.)

G. E. ADAMS.
CAST-OFF FOR SUSPENDER ENDS.

No. 530,318.

Patented Dec. 4, 1894.



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UNITED STATES PATENT OFFICE.

GEORGE E. ADAMS, OF NEW BRITAIN, CONNECTICUT.

CAST-OFF FOR SUSPENDER-ENDS.

SPECIFICATION forming part of Letters Patent No. 530,318, dated December 4, 1894.

Application filed May 10, 1893. Serial No. 473,703. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. ADAMS, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Cast-Offs for Suspender-Ends; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in devices for facilitating the release of suspender ends and the like. Heretofore in devices of this character, while much attention has been given to the production of devices which may be released or cast off easily, but little attention has been given to securing an easy re-engagement of the parts.

Now, it is the main object of my invention to produce a device which can be released with the greatest ease and re-engaged with equal facility, and it consists broadly in a cast-off having two co-operating members, one of which has a passage clear through it for a co-operating part of the other, and with an intermediate catch stop, or engaging portion for holding the co-operating member within the passage and with a means for disengaging the intermediate catch when it is desired to release the cast off. Thus the two parts may be united by inserting the co-operating member at the top of the passage and allowing it to seat against the catches. Then when it is desired to cast off, it is released from the intermediate stop catches and drawn straight forward down out of the passage, whereby the parts may be united and released with the greatest facility.

Further, the invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of a cast-off embodying my invention. Fig. 2 is a similar view with the cast-off partially released. Figs. 3 and 4 are sectional views taken through Figs. 1 and 2, respectively. Fig. 5 is a perspective showing a form of cast-off for permitting of a swiveling movement. Fig. 6 is

a sectional view through a modified form of the device. Fig. 7 is a perspective view looking at the under and upper sides of the co-operating parts illustrated in Fig. 6.

Similar letters of reference in the several figures indicate the same parts.

In carrying this invention into practice, in the simplest and most approved form, I have usually provided a body portion A, having at the upper end a means for attachment to the suspender or other garment or supporter. This may be a buckle of ordinary design, such as shown for instance, where the body of A forms the lower end of the locking tongue of a buckle body B.

The body A is provided with a guide way or passage straight through it from top to bottom formed by casting, cutting, or as shown, by striking up the sides *a* and bending them over on the front side forming front plates C, with an opening between them, thus forming a guide or passage way open on one side from top to bottom and opened at the top for the reception of the co-operating member. The lower ends of these front plates or overhanging portions C are formed into inwardly turned stop catches *c*, the function of which is to catch and hold the co-operating member when it is dropped or drawn into the passage from the upper end, and the upper ends, of said front plates, are bent outward, and in some instances flared out laterally as at *d d'* to more effectually guide the co-operating member into the passage, such flared and outwardly bent portions, forming in effect a wide mouth for the passage into which the co-operating member readily passes.

The part which I have designated as the co-operating member, or, cast-off proper, is lettered F in the drawings, and is provided with any approved means for attachment to the suspender or garment. As shown, such means consists simply of a loop G, through which the end of the suspender or other part may be caught, but it will be understood that any ordinary attaching device may be employed at the option of the manufacturer, the attaching means for securing either part of the device to the garments forming no part of the present invention.

The body of the co-operating member or cast-off is provided with a projection, shoulder

or stud for co-operation with the stop catches in the body portion, and it is obvious that these projections may take a variety of shapes, the only essential being that they or it shall be capable of passing through between the body portion and the stops or catch projections *c* so as to escape readily from the bottom of the passage or guide way in the body portion when released from such stop catches.

- 10 In Figs. 1, 2, 3 and 4, the projections or studs are formed by lateral enlargements *g* on the co-operating member, the central portion *G* of such member, being in this instance, just wide enough to pass between the front plates.
- 15 Thus the co-operating member or cast off proper in the form shown, may be hooked over the top of the body portion, so to speak, and passing down into the passage, will come to rest against the stop catches. Then, when it is desired to release or separate the two parts, the lower end of the co-operating member or cast off is bent or pressed backward, causing the projections to pass off the rear edges of the stop catches, and down out of the passage.
- 20 This movement may be accomplished by putting one finger or the thumb under the center of the device, and pressing forward, when the two parts will be caused to assume an angle with relation to each other and the studs will pass off the stop catches and allow the parts to separate.

- To prevent accidental separation, the escape of the studs from the stop catches is normally prevented by a spring which is arranged to hold the co-operating member or cast-off forward, for which purpose, it may be located in the passage itself as at *H* in Figs. 1 to 5, where it normally presses forward against the face plates and is displaced by the entry of the co-operating member or cast-off. The spring *H* also has a shoulder or projection *h* which snapping out over the upper end of the co-operating member or cast-off prevents the same from having a retrograde movement and hence holds it in place, unless positively released.

- The shape of the stud or studs on the co-operating member or cast-off may be varied as before indicated. Thus as shown in Figs. 5, 6 and 7, a simple round, flat headed stud is secured to the back of the co-operating member or cast-off, the head of which stud passes in behind the face plates at the top and comes to rest against the stop catches as in the former instance, the advantage of this structure being that the parts have a swiveling movement on each other to conform more perfectly to the movements of the wearer.

- In Figs. 6 and 7, it will be noticed, that the spring, instead of being held by the body as in the former instances, is mounted on the co-operating member or cast-off, and co-operates with the outer faces of the face plates, instead of the rear side of the co-operating member or cast-off. In fact, in this instance, the spring which is lettered *J* is formed by bending the end of the cast off back on itself

and passing the stud through it, all as shown clearly in said Figs. 6 and 7.

In the practical use of the device, it will be now understood, the co-operating member or cast-off is lifted to the top of the passage way in the body portion of the device, and the projection or stud allowed to drop down in such passage way until seated against the stop catches; when the two parts will be united. Then when it is desired to separate them, the wearer simply passes the thumb or finger behind the center and draws forward, such movement causing the parts to pivot as illustrated in Figs. 2 and 4 and the stop catches and studs to become disengaged when the natural strain on the parts will separate them. The connecting and disconnecting operations it will be seen from the foregoing, are carried out by a continuous forward movement and the connecting operation is practically as simple as connecting a hook with a ring or equivalent, requiring no manipulation, calling for the least thought or bother. The projection or locking shoulder below which the stud passes, prevents all probability of the device becoming separated accidentally, and hence when the parts are united, the device embodies the maximum safety with the greatest ease of manipulation in releasing or fastening.

Obviously the shoulder for preventing the retrograde or upward movement of the co-operating member or cast-off may be formed on the body portion itself, instead of on the spring, as shown for instance in Figs. 1 to 4.

Having thus described my invention, what I claim as new is—

1. In a cast-off, the combination with the body portion having the open sided passage or guide way therethrough, with the sides bent or flared out at the top to form a wide mouth and the stop catches in said passage or guide way, of the co-operating member having the projection adapted to pass through said passage or guide way and co-operate with the stop catches therein to retain the two members in engagement, substantially as described.

2. In a cast-off, the combination with the body portion having the open sided passage or guide way therethrough, formed by bending the sides of such body portion up over to form face plates, flared or bent out at the top for the entry of the co-operating member and the stop catches interposed in said passage or guide way, of the co-operating member or cast-off having the projection adapted to pass through said passage or guide way and co-operate with the stop catches therein to retain the members in engagement; substantially as described.

3. In a cast-off, the combination with the body having the open sided passage extending way through the same and at the bottom for the exit of said member formed at the top for the admission of the co-operating member, the stop catches interposed in said passage, the spring and the shoulder for preventing retro-

grade movement of the co-operating member, of the co-operating member having the projection for co-operating with the stop catches and held in engagement therewith by the spring, substantially as described.

4. In a cast-off, the combination with the body having the open sided passage extending way through the same and formed at the top for the admission of the co-operating member, the stop catches interposed in said passage and the spring, of the co-operating mem-

ber or cast-off having the round headed projection on the rear side adapted to enter the passage and co-operate with the stop projections therein to hold the parts in engagement, and whereby a swiveling movement of the parts on one another is permitted, substantially as described.

GEORGE E. ADAMS.

Witnesses:

R. A. MOORE, Jr.,
G. W. TRAUT.