

(No Model.)

E. LAMB.  
SUSPENDER END.

No. 362,290.

Patented May 3, 1887.

FIG. 1.

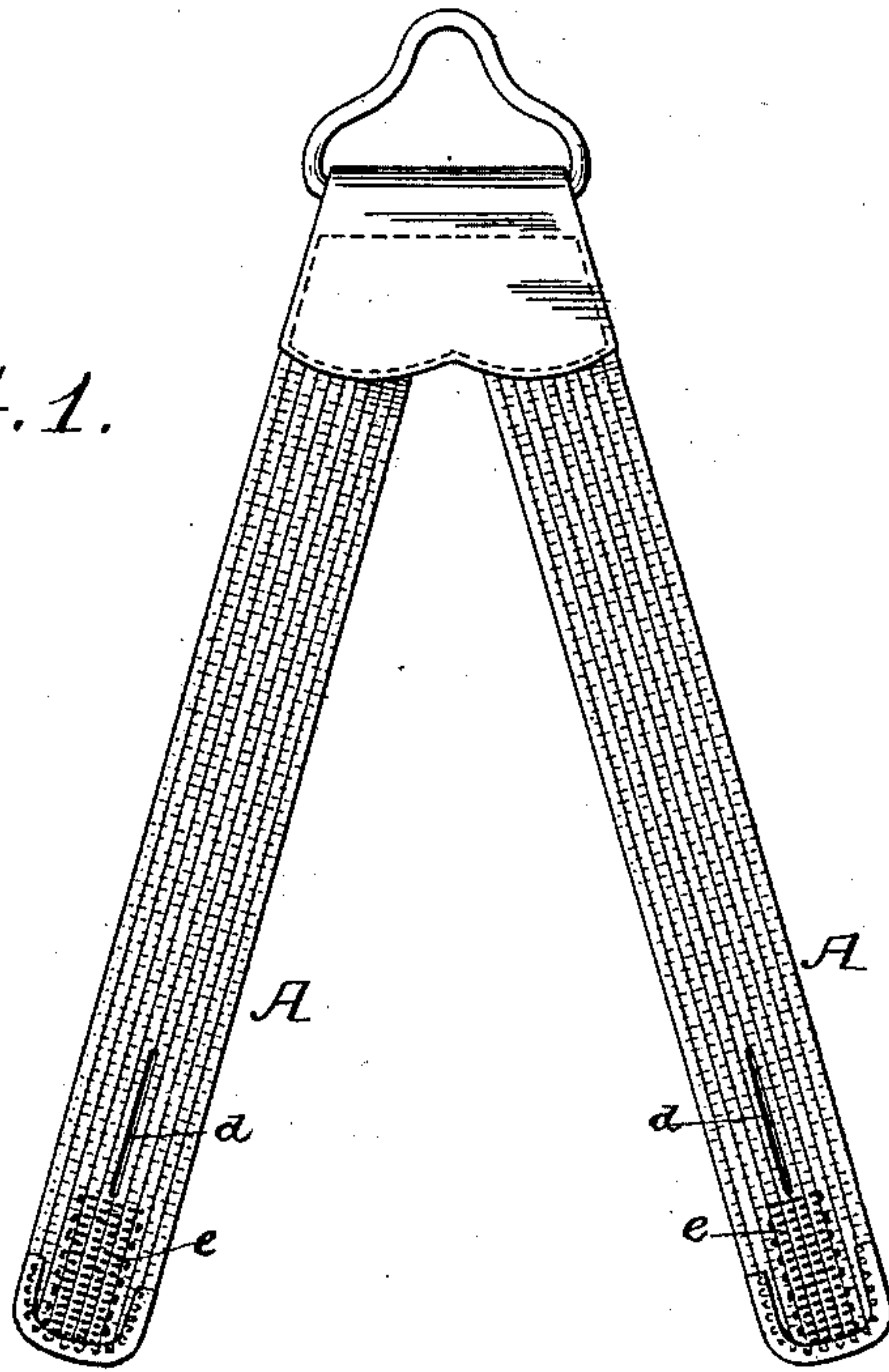


FIG. 3.

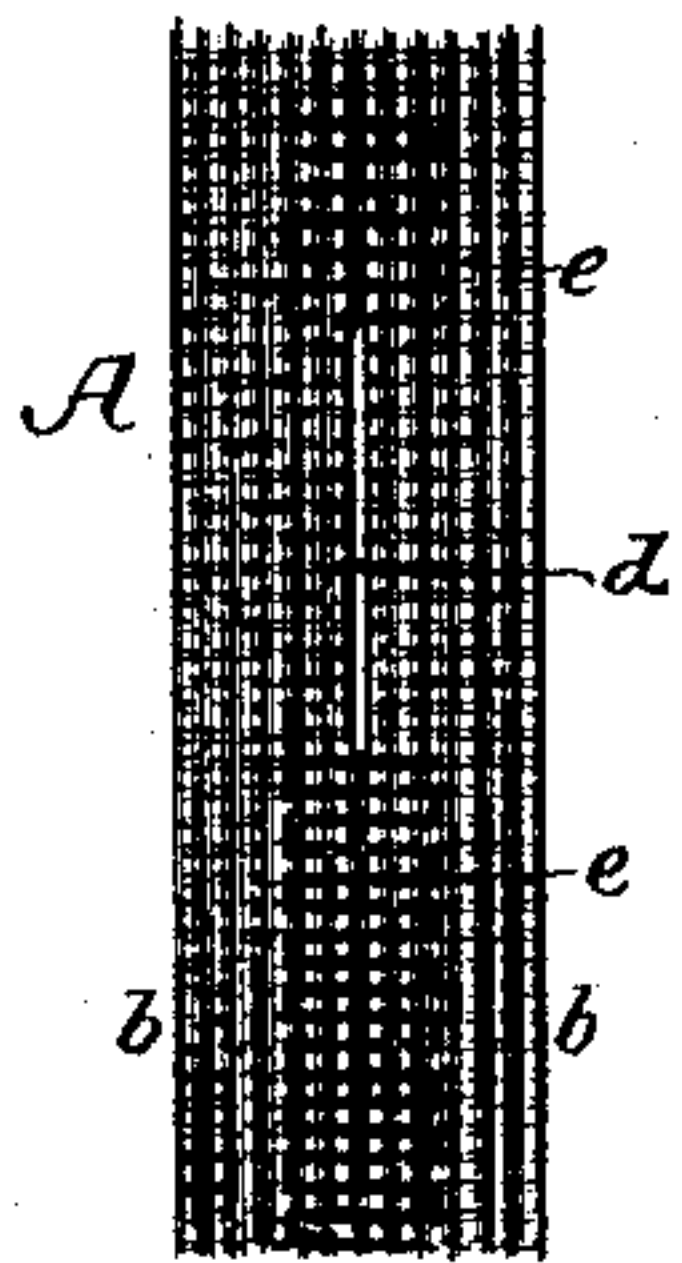


FIG. 2.

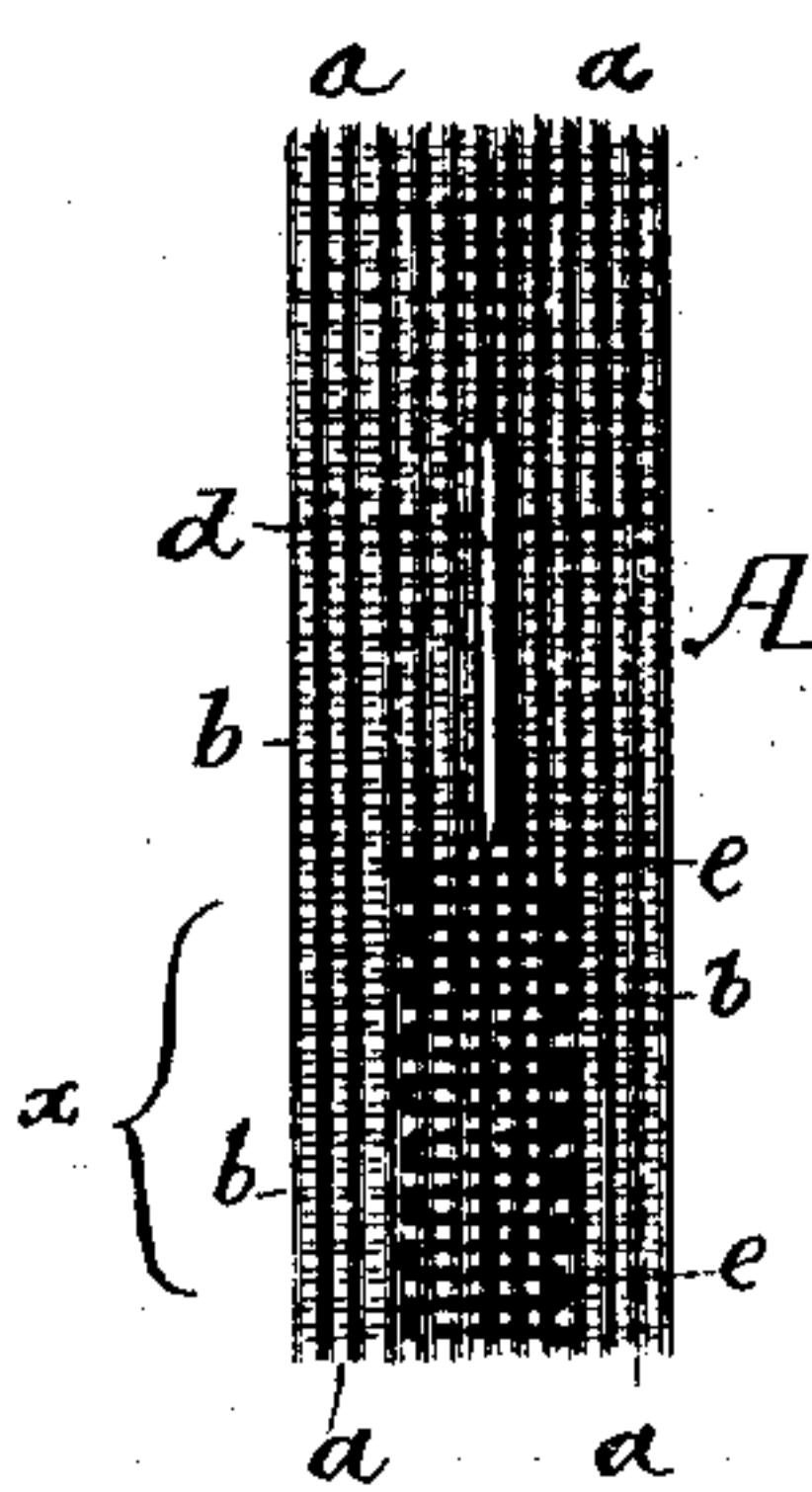


FIG. 4.

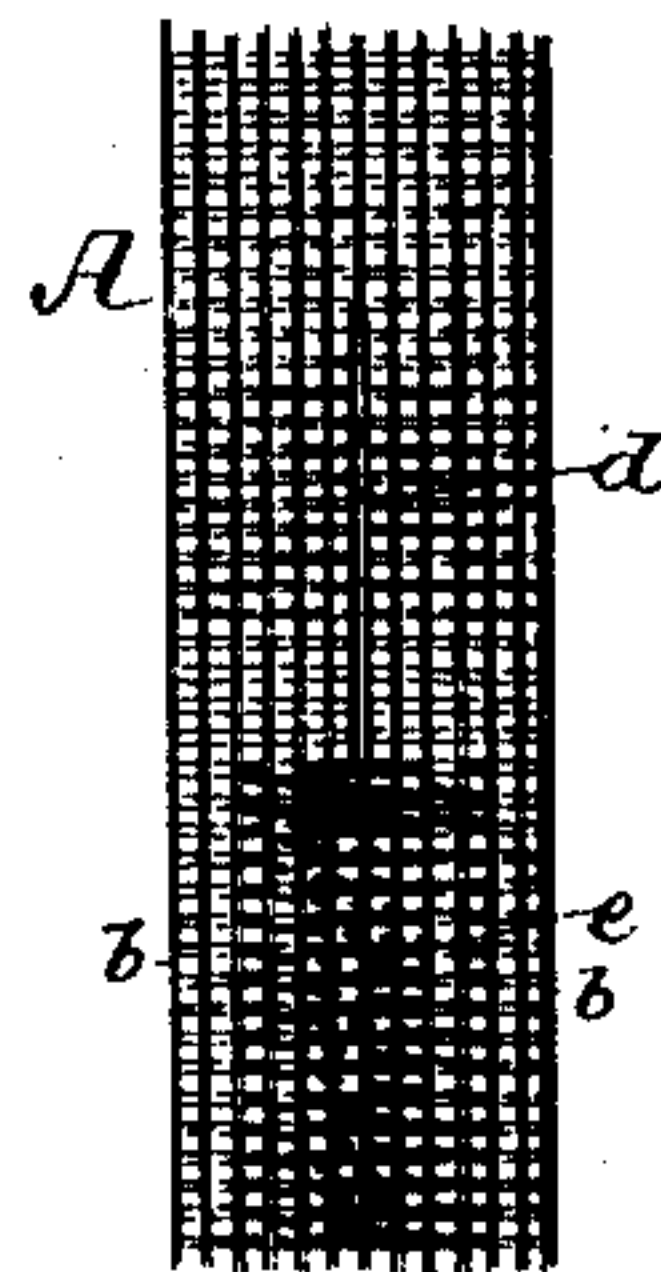
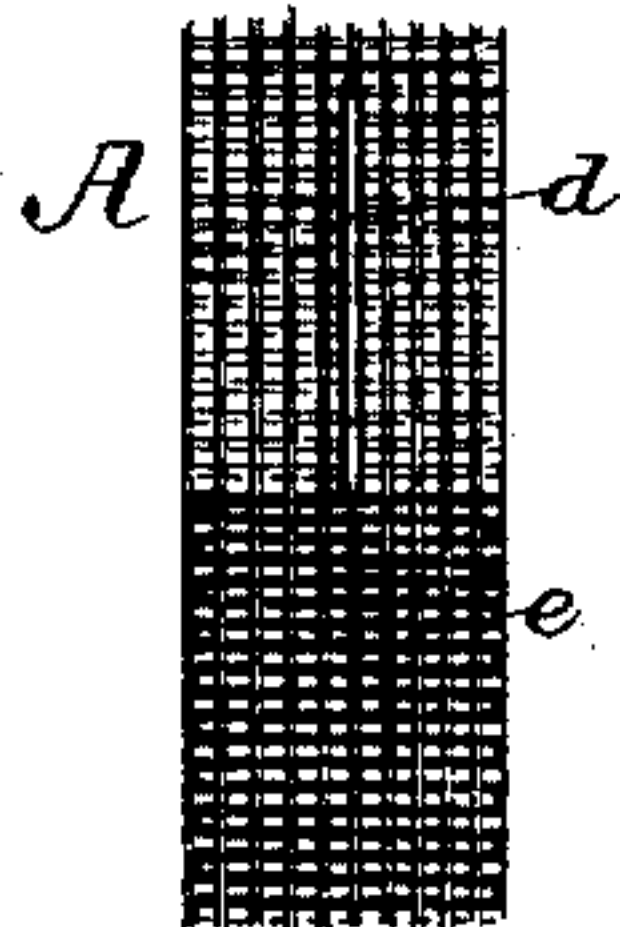


FIG. 5.



Witnesses:  
William D. Bonner.  
John E. Parker

Inventor:  
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# UNITED STATES PATENT OFFICE.

ELIJAH LAMB, OF CAMDEN, NEW JERSEY.

## SUSPENDER-END.

SPECIFICATION forming part of Letters Patent No. 362,290, dated May 3, 1887.

Application filed February 12, 1887. Serial No. 227,372. (No model.)

*To all whom it may concern:*

Be it known that I, ELIJAH LAMB, a citizen of the United States, and a resident of Camden, Camden county, New Jersey, have invented certain Improvements in Suspenders and like Articles, of which the following is a specification.

The object of my invention is to strengthen the button-holes in woven straps, such as are used for suspender-ends; and this object I attain by providing the strap with a re-enforcing thread or threads interwoven with the threads of the strap, all as fully described hereinafter.

In the accompanying drawings, Figure 1 is a view of a suspender-end the straps of which are made in accordance with my invention. Fig. 2 is a view of that part of one of the straps in which the button-hole is formed. Fig. 3 is a view of part of a strap, showing the re-enforcing-threads at both the top and bottom of the button-hole; and Figs. 4 and 5 are views showing modified forms of my invention.

A are the straps forming part of a suspender-end, each strap being composed of a series of warp-threads, *a*, and weft-threads *b*, interwoven in any suitable manner, the button-hole *d* being preferably formed in the strap during the process of weaving. In this class of suspender-ends as ordinarily made the objection has been that the button-hole is weak and apt to tear out, and strengthening devices have been attached to overcome this difficulty. I have found that by interweaving an extra thread, *e*, with the warps in the portion *x* of the strap—that is, from the lower portion of the button-hole to the end of the strap—I very materially strengthen this portion of the strap and enable it to resist the strains to which it is subjected, as such strains are exerted directly in line with the re-enforcing thread. The thread *e* is introduced dur-

ing the operation of weaving either by using an extra shuttle by a doup-thread in the warp or by other means, as desired, the thread shown in Fig. 2 being introduced by means of an extra shuttle. The re-enforcing thread is thus introduced with but little extra expenditure of time in weaving and at no material increase in cost.

In Fig. 3 I have shown a strengthening-thread both above and below the button-hole, in Fig. 4 I have shown a thread floated on the upper side of the strap, so as to present a smooth flat surface, and in Fig. 5 I have shown the strengthening-thread extending completely across the strap.

More than one thread may be used, if desired; but one thread is preferred.

It will be understood that my re enforcing threads may be formed in straps which are used as stocking-supporters and for like purposes, as well as for suspender-ends.

I claim as my invention—

1. The within-described strap for suspender-ends and like uses, said strap having a button-hole formed therein, and having at the end of the button-hole a section of the material re-enforced by a thread or threads interwoven with the threads of the strap, all substantially as specified.

2. The within described strap having a button-hole formed therein, and having at each end of said button-hole a section of the material re-enforced by a thread or threads interwoven with the threads of the strap, all substantially as specified.

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

ELIJAH LAMB.

Witnesses:

WILLIAM D. CONNER,  
HARRY SMITH.