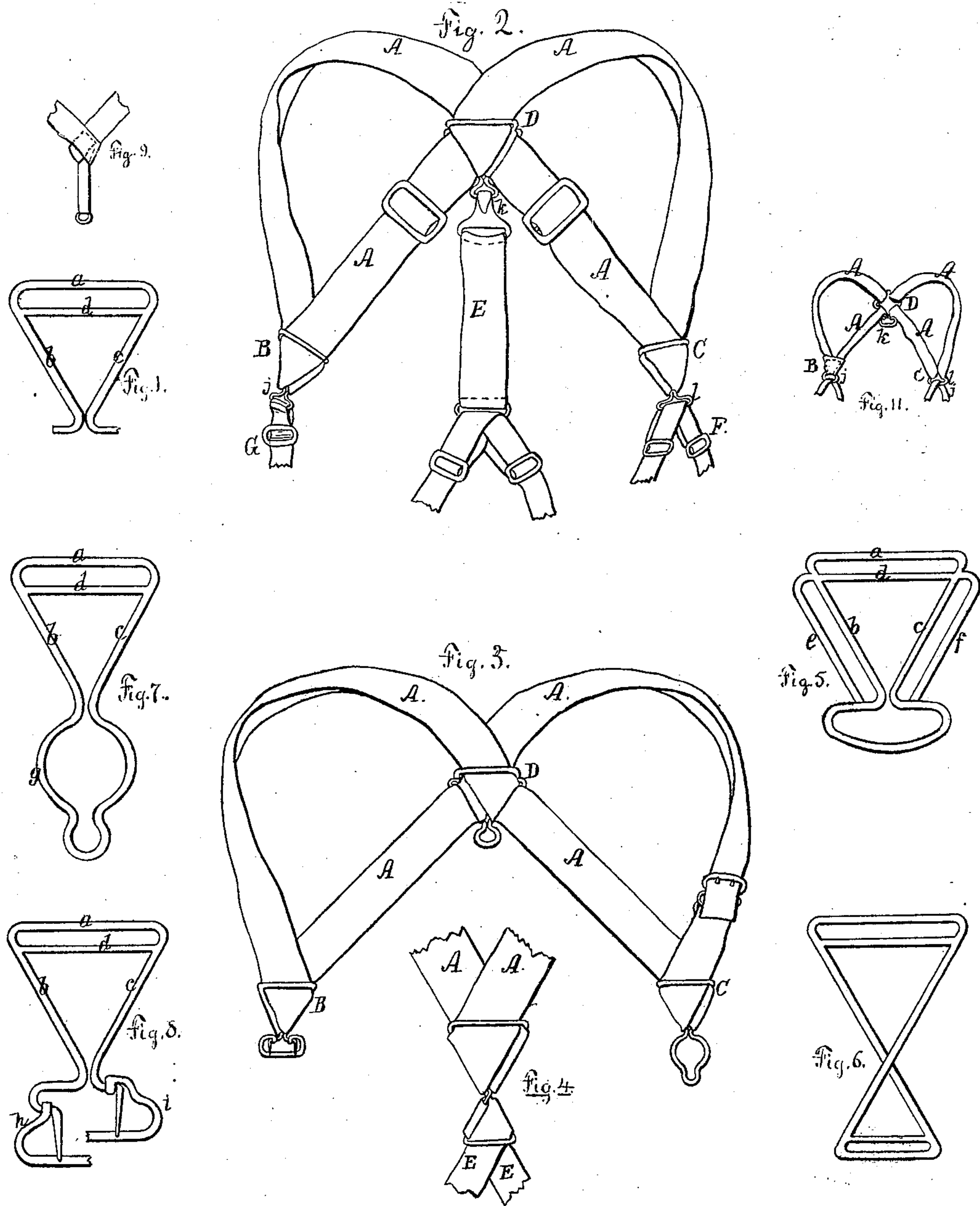


J. W. Smith, Suspender.

No. 102,841.

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Witnesses.

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IMPROVEMENT IN SUSPENDERS.

Specification forming part of Letters Patent No. **108,841**, dated November 1, 1870.

I, JOSEPH WILLIAM SMITH, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Suspenders, of which the following is a specification:

The main objects of my invention are, first, to combine the straps which pass over the shoulders with the strap which connects them with the pantaloons, by folding the former as hereinafter described, and as shown more especially in Figure 9 of the drawing, and inserting the connecting-straps and securing it by sewing, riveting, or cementing between the folds thus formed in the main strap; second, to combine with a suspender-strap, folded as described, a device of a novel construction, which lies partly between the folds and partly outside of them, and operates to hold the folds in place.

In the drawing, Fig. 2 represents a suspender and shoulder-brace combined, which embodies all my improvements. Fig. 4 shows the application of my device as a connection between the shoulder and back-straps of ordinary suspenders.

The first part of my invention is applicable to all suspenders in which the straps are secured together at an angle to each other; and this part of my invention consists in folding a single piece of webbing, as shown in Figs. 2, 3, 4, and 9, and securing the folds together by sewing or cementing or riveting, first inserting between the folds, as shown in Fig. 9, the strap which is to be connected to the piece thus folded.

The second part of my invention differs from the first only in the fact that the device inserted between the folds is so constructed that it holds them in place by reason of the web being passed under the bar forming the upper part of the device, as more fully described below. This device is shown without the straps in Fig. 1 of the drawing, and Figs. 2, 3, and 4 show the proper arrangement of the straps with it.

In Fig. 1 the device is shown without any loop at the bottom, for the reason that any desired form of loop may be used, as, for instance, a metallic button-hole, as shown in Fig. 7, or a buckle, as shown in Fig. 8, or a second similar device, as shown in Figs. 4 and 6.

The bar *d* is not essential to the operation

of my device; but I prefer to use it, for the reason that it secures the strap more perfectly and makes a neat finish. The bar *a*, however, is essential to my device, as it is by passing the web under this bar that the folds are held in place.

I am aware that the method of folding a strap herein described is not new, and also that it has been applied to suspenders, in connection with a device to which the short buttoning-straps are attached, as shown in Leach's patent of May 11, 1869; but, so far as I am aware, no suspender has ever heretofore been made by inserting the short buttoning-straps within the folds, and then securing them together by sewing or any equivalent thereof; nor has any device ever heretofore been made so that the web could be passed over the two sides and under the base, as in mine, or so that the web was or could be combined with the device in the manner above described.

In Fig. 2 the main strap *A A* has one of its ends secured to a slide. The other end is then passed around the part *e* and between the parts *e* and *b* of Fig. 5; then through the slide; then through the space between the parts *a* and *d* of Fig. 1, (under *a* and over *d*;) then over the part *b* and back of the device over the part *e*, when it passes again through the space between the parts *a* and *d*, (over *d* and under *a*;) then to the device shown in Fig. 5, where it is arranged with the parts *a*, *b*, *c*, and *d* of that device precisely as if the parts *e* and *f* were not present; then to the other device precisely similar to that shown in Fig. 1; then through a second slide; then back to the device shown in Fig. 5, where it passes through the space between the parts *e* and *f*, and back to the second slide, where it is secured, thus forming an adjustable shoulder-brace and suspender with but one piece of web.

When the devices at B, C, and D are formed with a loop upon them, as shown in Fig. 2, any suitable strap, such as those shown at E, F, and G, may be used, if desired; or, instead of the straps, a button-hole may be formed upon the devices at B and C, as shown in Fig. 7, and a buckle upon the device at D, as shown in Fig. 8.

The suspender shown in Fig. 3 is composed of the three devices, as shown in Fig. 2, and does not differ from the latter, except that the

webbing A A is arranged in a slightly different manner. In this suspender one end of the piece of webbing is secured to a buckle and then passes down to the device at C, then to the device at D, where it passes over the part *f*, Fig. 5, and under the parts *c* and *b*, and over the part *e*, then to the device at B, then back to D, and from thence to the buckle. This brings the adjustment on the front part of the shoulder-straps, as it is more convenient than when on the back, as in Fig. 2. A second buckle can be used upon the other shoulder-loop, if desired; but it is not necessary, because the web is so held by my device that it can always be adjusted by slipping one part of the web through the space between the parts *a* and *b*, and pulling the other parts of the web through the same space.

My shoulder-braces and suspenders combined admit of the following changes of style, &c.: first, from a combined suspender and shoulder-brace with six short straps connecting the main straps with the pantaloons to one with but four such straps, two on each side; second, from six to four, one on each side and two behind; third, from six or four to two, one on each side. Consequently, I construct my suspender and brace combined with three loops, *j*, *k*, and *l*, Fig. 2, and detachable straps E, F, and G, so that when the strap E is hooked to the loop *k*, and the loops *j* and *l* are provided with straps F, the shoulder-loops can be connected to the pantaloons at six points.

In other forms of suspenders there are but four such connecting-straps, two on each side. When this is preferred, the strap E is omitted, and the strap F retained in the loops *j* and *l*.

In still another form there are but four such connecting-straps, but only one on each side and two behind. In this case the strap E is retained, and one of the straps at F is detached, the other being attached to the loop, as shown at G. When the regular "pivot-action," so called, is desired, the strap E is dispensed with, and also one of the straps F, the other being attached to the loop *l*, as shown at G, thus making a suspender with but two such connecting-straps, one on each side.

This capacity for change of style is a very valuable feature of my suspender—in fact, a dealer with but one pair of my suspenders is as well able to meet the tastes of different customers as if he had one pair each of the four different styles now in vogue.

This feature of my invention, it will be obvious, does not at all depend upon the use of the devices shown in Figs. 1 and 5, or any other special device. All that is essential is that the loops *j*, *k*, and *l* should be attached suitably to the web, so that detachable straps may be used with each loop, as described.

Fig. 11 shows a modification which illustrates this, the straps A A A A being separate pieces of web, each secured to the central metallic device at D, which terminates in a buckle, to

which the strap E may be attached, while at B the two straps are united in a well-known way by a piece of leather, to which is secured a ring, *j*, and at C the two straps are each secured to a metallic device shaped like a triangle with its base *l* curved.

The shoulder-loops shown in Fig. 11 are old, and, in fact, that figure represents a well-known form of suspender and shoulder-brace combined, except that the connecting-straps E, F, and G can be changed at pleasure, so as to connect the shoulder-loops with the pantaloons at six, four, or two points.

I do not claim shoulder-loops; nor do I claim shoulder-loops in combination with either six, four, or two connecting-straps; but in all combinations of shoulder-loops and connecting-straps known to me before my invention no provision was made whereby any two or any four of the six connecting-straps could be detached from and reattached to the shoulder-loops at pleasure.

In the patent to Ritter, dated February 1, 1870, it is true any pair of the connecting-straps can be detached and reattached at pleasure, but no one strap of any pair can be so detached and reattached; and this is also true in the patent to E. Jennings, Jr., dated May 4, 1869; but neither of these patents embody this part of my invention, for the reason that no provision is made in either for a change to two of the styles now in vogue—viz., first, a suspender and shoulder-brace combined with but two such connecting-straps, one on each side; and, second, with but four such straps, two behind and one on each side—although Ritter does make a provision for a single change from six such straps to but four, two on each side.

Another advantage of the arrangement of straps and slides shown at E is that the short buttoning-straps are made adjustable. This is also a new feature, and one of great importance, as without it all combined shoulder-braces and suspenders of the kind consisting of two adjustable shoulder-loops, such as shown in Figs. 2, 3, and 11, are very defective, as they do not admit of lowering and raising the waistband of the pantaloons, except by letting out or taking up the shoulder-loops, which decreases or increases the bracing effect.

So far as I know or believe, I am the first to construct a combined suspender and shoulder-brace of this kind—that is, with adjustable shoulder-loops and two pairs of adjustable side buttoning-straps, each strap of each pair being capable of being readily detached and reattached, and any strap, when attached singly, being also adjustable.

I claim as my invention—

1. The combination of a suspender-strap, folded as described, with the strap which is to be attached to it, when that strap is inclosed within the folds of the suspender-strap, in the manner described, and these folds and this strap are secured together by sewing, riveting, or cementing, in the manner shown.

2. The combination of the triangular frame or strap-holding device, constructed as described, and represented in Figs. 1, 6, 7, and 8, with a suspender-strap, in the manner described.

3. The strap-holding device above described, consisting of a loop, or its equivalent, connected to the apex of the triangular device shown in Fig. 1, and so formed, as above described, that the web can be passed over the sides and under the base of the triangle.

4. The device formed by connecting the aux-

iliary fenders *e f* with the device claimed in the preceding clause of claim, as shown in Fig. 5.

5. The combination of the devices B, C, and D, when constructed as shown in Figs. 2 and 3, but not as shown in Fig. 11, with the webbing A, folded and arranged substantially as described.

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