(No Model.)

S. FLORSHEIM.

Elastic Gore, Gusset, &c., for Wearing Apparel.

No. 238,101. **Patented Feb. 22, 1881.**

Fig. 1.

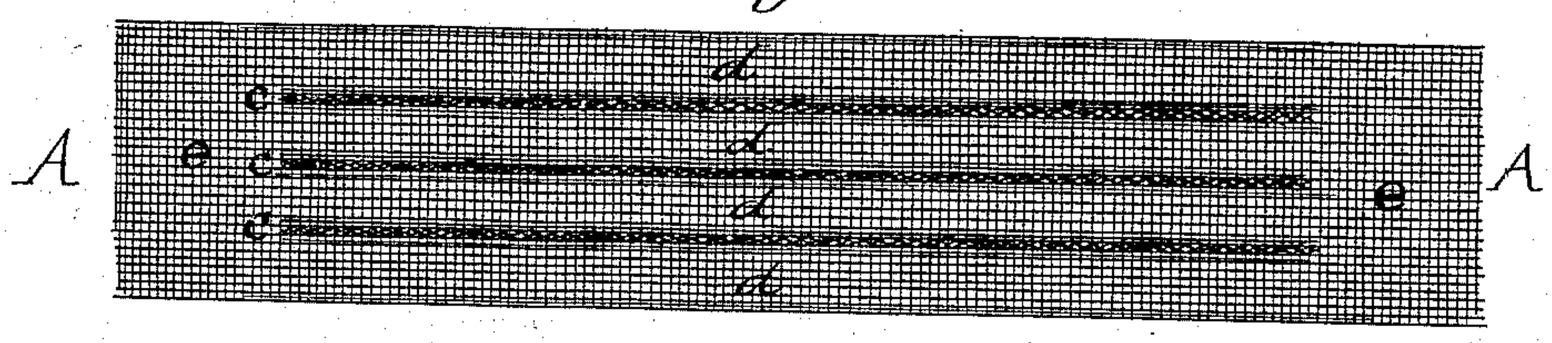


Fig. 2.

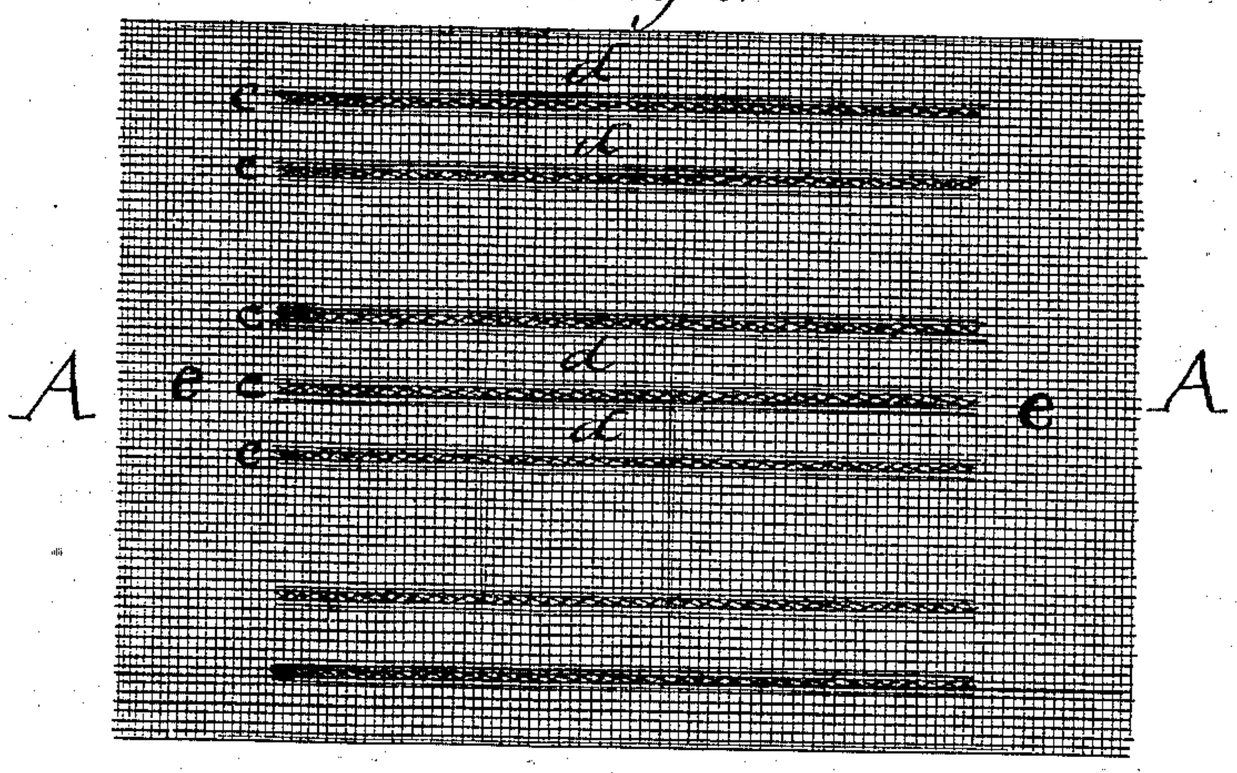


Fig. 3.

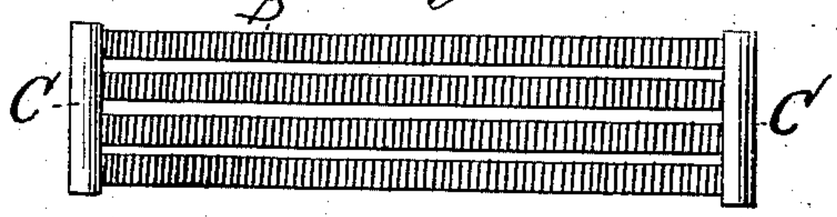


Fig. 4.

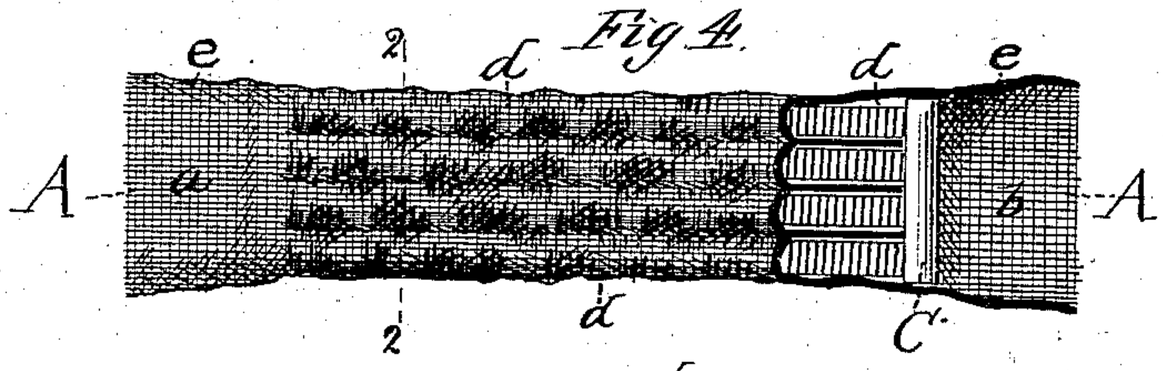


Fig. 5.

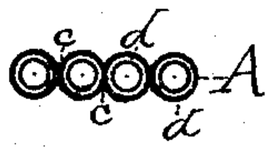
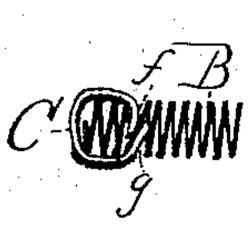


Fig. 6



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UNITED STATES PATENT OFFICE.

SIMON FLORSHEIM, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO THOMAS H. BALL, OF SAME PLACE.

ELASTIC GORE, GUSSET, &c., FOR WEARING-APPAREL.

SPECIFICATION forming part of Letters Patent No. 238,101, dated February 22, 1881.

Application filed July 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, SIMON FLORSHEIM, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Elastic Gores, Gussets, and Sections for Wearing-Apparel, of which the following is a specification.

The substitution of spiral metal springs for india-rubber as an element in elastic gores, gussets, and sections for wearing-apparel has not heretofore proved successful, for the reason that in all instances the springs have been stayed at their ends by the same stitching that secures the gore to the material of the article of wearing-apparel to which it is applied. This stitching cannot be done by machine, since the wire of the springs would be cut by the needle when struck squarely, or the needle itself be broken; and when the elastic gore or section is sewed in position by hand, and the springs are secured by the same stitching, the seams are thick and uneven, and present a bungling appearance, which destroys the salableness of the article, in addition to the fact that the hand-sewing has heretofore made the use of metal springs impracticable on account of the increased cost.

It is the object therefore of my invention to overcome the objections to the employment of spiral metal springs as a substitute for india-rubber in elastic gores, gussets, and sections for wearing-apparel, and this I accomplish by extending the springs only part way across the covering material, and staying them at their ends by securing them to such covering material itself, while the covering material is extended beyond the ends of the springs to form inelastic margins, by which the gore can be secured in position by stitching these margins, on a sewing-machine, to the material of the article of wearing-apparel to which the gore is applied. This elastic gore is adapted more especially for corsets, for the sides of gaiters, and for use upon the waistbands of overalls and pantaloons; but it can be employed upon other articles of wearing-apparel wherever rubber-cloth is now used, and also, on account of its strength, durability, coolness, its independence of action, and the nicety with which its elasticity can be regulated, in many places where rubber-cloth cannot be employed to advantage.

My invention consists, first, in securing the metal springs to the covering material and extending such covering material beyond the ends of the springs to form inelastic margins; second, in puckering the center of such covering material, while the inelastic margins are left plain and unpuckered; third, in weaving the covering material of such elastic gore with the covering-tubes formed therein in the process of manufacture, such material and the tubes being woven of a particular pattern to suit the location where the elastic gore is intended to be used, the tubes not extending to the ends of the material; and, fourth, in the peculiar fastening for securing the springs to the covering material, all as fully hereinafter explained, and pointed out by the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a view of the covering material with four tubes woven therein; Fig. 2, the covering material with three groups of two tubes each woven therein; Fig. 3, a view of a group of four metal springs secured together by the peculiar fastening device; Fig. 4, a view of the elastic gore complete, the upper thickness of the covering material being removed at one end to show the springs; Fig. 5, a cross-section of the same on line 2 2 of Fig. 4, and Fig. 6 an end view of one of the fasteners for securing the springs of a group to the covering material.

Like letters denote corresponding parts in all the figures.

A is the covering material, and B the closely-coiled spiral springs of metal, which are inclosed in tubes *d* in the covering material. The covering material is puckered over the springs, which, however, do not extend to the edges of such material, inelastic and unpuckered margins *e* being left outside of the ends of the springs. The springs are secured at their ends to the covering material, so that they are wholly independent of the stitching that secures the gore in position. The covering material is made of such shape and size that when it is puckered over the springs the elastic gore will be suitable for the location where it is intended to be used. The elastic gore is secure

in position by stitching the plain inelastic margins *e*, on a sewing-machine, to the material of the article in which the gore is to be employed.

In addition to the advantages before stated the elastic gore provided with these inelastic margins possesses great advantages over rubber-cloth, for the reason that in sewing the rubber-cloth in position more or less of the rubber ligaments are cut off by the needle, and such ligaments soon pull out in use, and do not longer serve to resist the strain on the cloth, while in my gore the elasticity is not injured in the least by the stitching.

Where the purpose for which my elastic gore or gusset is to be used requires only a band having a single group of springs—as, for instance, for a strap to be applied to the waistbands of overalls or pantaloons—the covering material is divided throughout its width into tubes of equal size, as shown in Figs. 1 and 4; but where the material is of considerable width, (at right angles to the springs,) as when used for gores or sections in corsets, or for the sides of gaiters, the tubes are arranged in groups, as shown in Fig. 2. Such groups may have two or more tubes each. Those groups where the greatest strength and stiffness are required would have the greatest number of tubes to accommodate a corresponding number of springs, while in portions of the gore where great elasticity would be better and not so much strength is required, the groups would have a less number of tubes; or the covering material may be provided throughout its width with contiguous tubes, and the springs could then be arranged in groups, as desired, a number of tubes between the groups of springs not being occupied.

The covering material I prefer to weave of two thicknesses, *a b*, and in the process of weaving, the threads of the two thicknesses are interlocked on lines *c*, running parallel with the warp. These interlocked lines do not extend to the edges of the covering material, the margins *e*, of double thickness, extending beyond the tubes formed by such interlocked threads. For this reason the covering material has to be woven of a particular pattern, having tubes of the right length and margins of proper width to adapt the elastic gore or section, when complete, to the location where it is intended to be used.

The woven covering material with the tubes woven therein during the process of manufacture is cheaper, stronger, and neater in appearance than when such tubes are formed by sewing.

The springs of each group are preferably secured together at their ends and to the covering material by split metal tubes C, which are pushed over the end coils of the springs, the edges *f g* of the split in the tubes being lapped past each other in spiral form to accommodate them to the coils of the springs. The split tubes are pinched or partly closed at their ends to retain the springs in position.

Instead of the split tubes, the springs may be connected by small plates pushed between the coils. These metal fastenings lie across the ends of the tubes between the thicknesses *a b* of the covering material, and stay the ends of the springs by fixing them to the covering material at those points.

In the elastic gore the covering material performs three offices, viz: it covers the springs, limits their expansion, and furnishes means for securing the gore in position.

What I claim as my invention is—

1. An elastic gore, gusset, or section for wearing-apparel, composed of a covering material having tubes, spiral metal springs inclosed by such tubes and not extending to the edges of the covering material, and stayed at their ends by such covering material, and inelastic margins outside of the springs, substantially as described, for the purpose set forth.

2. An elastic gore, gusset, or section composed of a covering material having tubes, and spiral metal springs inclosed by such tubes and not extending to the edges of the covering material, and stayed at their ends by such covering material, said covering material being puckered at its center over the springs, and having plain unpuckered margins extending wholly outside of the springs, substantially as described and shown.

3. An elastic gore, gusset, or section composed of a covering material woven with tubes therein of a particular pattern to suit the location where the elastic gore, gusset, or section is intended to be used, such tubes not extending to the edges of the covering material, and spiral metal springs inclosed by such tubes, and stayed by the covering material at the ends of the tubes, substantially as described and shown.

4. In an elastic gore, gusset, or section, the combination of the covering material made of double thickness, and having tubes not extending to the edges of the covering material, with spiral metal springs inclosed by such tubes, and fastenings extending across the ends of the tubes between the thicknesses of the covering material, substantially as described and shown.

SIMON FLORSHEIM.

Witnesses:

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