A. W. GEIGER.

ELASTIC STRIP.

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1,211,696.

Patented Jan. 9, 1917.

Fig. 1

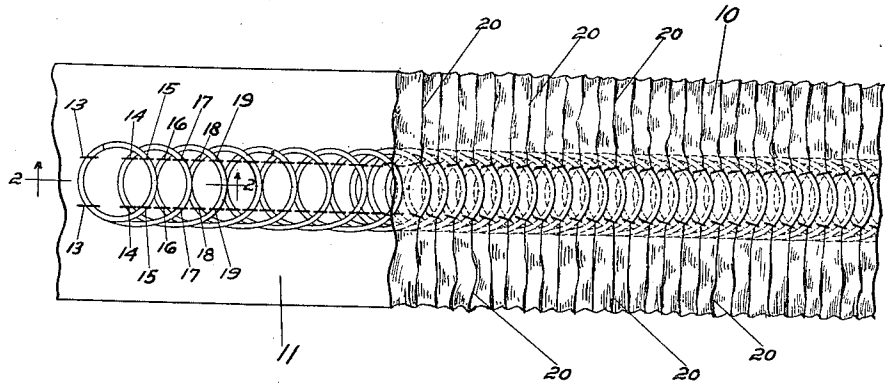


Fig. 2

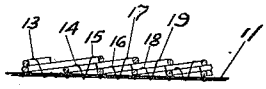
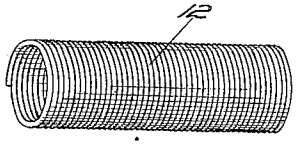


Fig. 3



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ELASTIC STRIP.

1,211,696. Specification of Letters Patent. Patented Jan. 9, 1917.

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To all whom it may concern:

Be it known that I, ALBERT W. GEIGER, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Elastic Strips, of which the following is a specification.

This invention has for its object to provide an elastic strip adapted for various uses, as in garment sections, suspenders, garters, armlets, etc., which shall be relatively inexpensive to make, durable and, most important of all, shall avoid the use of rubber either in the form of web, cords or threads.

With these ends in view, I have devised the novel elastic strip which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is a plan view of my novel strip, the upper ply being broken away at the left to show the lower ply which is stretched and the flattened coils of wire which are greatly elongated; Fig. 2 a section on the line 2—2 in Fig. 1, looking in the direction of the arrows, and Fig. 3 is a perspective view showing the manner in which spring wire is coiled for use in making my novel strip.

In carrying out my novel invention, I use an upper ply 10 and a lower ply 11 of non-elastic fabric and a coil of wire indicated as a whole by 12. An ordinary two-needle sewing machine is used which is of course adjusted to make stitches of the required length and with a loose tension. In starting, supposing the left end, as seen in Fig. 1, to be the starting point, the left end of the coil of wire is flattened out and the coils extended considerably into elliptical form, and the two plies of fabric with the flattened extended coils between them are placed under the presser foot of the machine and the machine is started, the operator taking care to retain the flattened coils of wire in place between the plies of fabric. Care is taken in starting to see that the first two or three coils are properly caught by stitches, after which the strip may be produced at the normal speed of the machine, the only skill required on the part of the operator being in flattening out and extending the coils and retaining them in place between the plies of fabric. The first few stitches are indicated by individual numerals, a row of stitches being made by each needle of the machine. Each coil is held by four stitches and each stitch engages a single coil only. This will be readily understood from Figs. 1 and 2. Starting at the left, it will be understood that each coil partly overlies the coil toward the right. The stitches indicated by 13 may be called the starting stitches and usually engage two coils which I will term the starting coils, in order to securely lock the coil of wire to the plies of fabric. The stitches indicated by 14 engage what I will term the low side of the second elongated coil; the stitches indicated by 15 engage the high side of the starting coil; the stitches indicated by 16 engage the low side of the third elongated coil; the stitches indicated by 17 engage the high side of the first elongated coil; the stitches indicated by 18 engage the low side of the fourth elongated coil; the stitches indicated by 19 engage the high side of the second elongated coil, and so on.

It will be understood that in making the strip, the plies of fabric lie flat and the coil of wire, in addition to being flattened so that the coils lie in approximately the horizontal plane, has its coils extended longitudinally of the plies of fabric into partly elliptical form. The amount of extension of the coils is a matter to be determined by the operator, and is regulated by the requirements of use. As soon as the completed strip passes the presser foot of the machine, the coils will necessarily contract to the full extent permitted by the stitches. This draws the plies of fabric into gathers or folds indicated by 20. It will be understood that in the completed strip the coils are always extended to an appreciable extent and are adapted to be extended still farther in use, thereby imparting the required elasticity to the strip.

Having thus described my invention, I claim:—

1. An elastic strip consisting of a coil of spring wire having its coils flattened and elongated, and plies of non-elastic fabric between which the flattened coils are stitched while elongated, the coils being adapted to contract and gather the plies of fabric.

2. An elastic strip comprising a coil of spring wire having its coils flattened and elongated, plies of non-elastic fabric on opposite sides of the coils and lines of stitching whereby opposite sides of the coils are secured to the plies of fabric.

3. An elastic strip comprising a coil of spring wire having its coils flattened and elongated, plies of non-elastic fabric on opposite sides of the coils and lines of stitching through the plies of fabric, each stitch engaging a single coil only.

4. An elastic strip comprising a coil of spring wire having its coils flattened and elongated, plies of non-elastic fabric on opposite sides of the coils and lines of stitching through the plies of fabric and engaging the coils, each coil being held by four stitches and each stitch engaging a single coil.

5. An elastic strip comprising a coil of spring wire having its coils flattened and elongated so that contiguous coils overlie, plies of non-elastic fabric on opposite sides of the coils, and lines of stitching through the plies of fabric, successive stitches engaging the low side of one coil and the high side of the contiguous coils.

In testimony whereof I affix my signature.

ALBERT W. GEIGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."