W. ACHTMEYER.

METHOD FOR WEAVING GARTER PADS.

APPLICATION FILED OCT. 12, 1917.

1,267,954. Patented May 28, 1918.

Fig. 2.

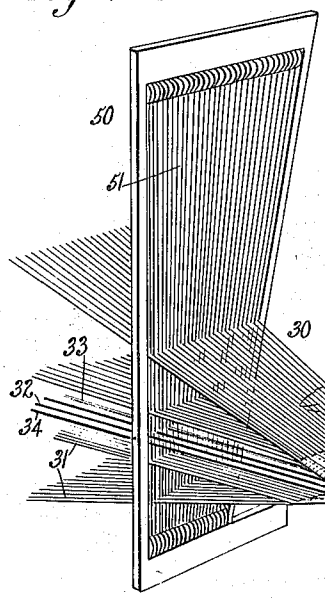


Fig. 1.

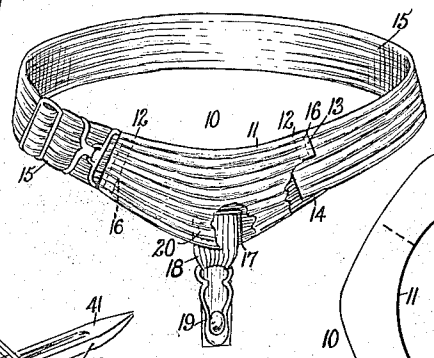


Fig. 12.

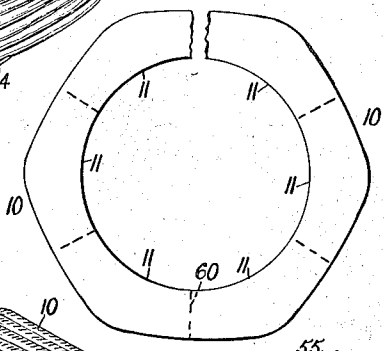


Fig. 10.

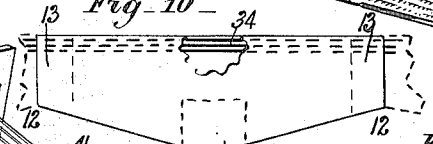


Fig. 3.

Fig. 11.

Fig. 6.

Fig. 5.

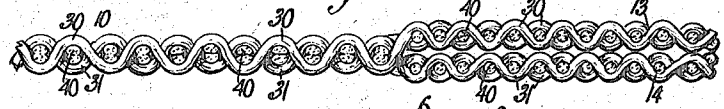
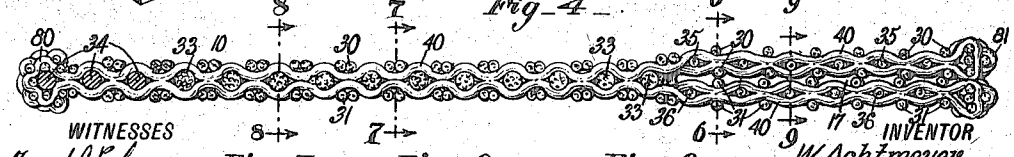


Fig. 4.



WITNESSES

Frank C. Palmer.

Fig. 7.



Fig. 8.

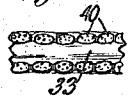


Fig. 9.



INVENTOR

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UNITED STATES PATENT OFFICE.

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METHOD FOR WEAVING GARTER-PADS.

1,267,954. Specification of Letters Patent. Patented May 28, 1918.

Application filed October 12, 1917. Serial No. 196,284.

To all whom it may concern:

Be it known that I, WILLIAM ACHTMEYER, a subject of the German Emperor, having declared my intentions to become a citizen of the United States, and a resident of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and improved Method for Weaving Garter-Pads, of which the following is a full, clear, and exact description.

The invention relates to the manufacture of garters having a pad or a shield from which extends a leg encircling band and a hose clasp for gripping hosiery.

The object of the invention is to provide a new and improved method for producing a woven garter pad or shield in one single piece and which pad is exceedingly strong and durable, neat in appearance and readily and accurately fits itself to the wearer's leg.

In order to accomplish the desired result use is made of a method whereby the garter pad is woven on a loom, and which method consists in providing top and bottom sets of warps formed of inelastic warp threads, and an intermediate warp having inelastic warp threads and at one side a number of elastic warp threads, the said intermediate warp being interposed between the said sets of inelastic warps, moving the warp threads in each warp gradually from each other and then gradually toward each other, and interweaving the said warps with weft threads to form a multiply fabric gradually decreasing in width from the median line to the ends thereof.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a garter provided with the improved pad or shield;

Figs. 2 and 3 are perspective views illustrating the method of weaving the pad;

Fig. 4 is an enlarged cross section of the weave on the line 4—4 of Fig. 3;

Fig. 5 is an enlarged longitudinal section of the same on the line 5—5 of Fig. 3;

Fig. 6 is a longitudinal section of the weave on the line 6—6 of Fig. 4;

Fig. 7 is a similar view of the same on the line 7—7 of Fig. 4;

Fig. 8 is a similar view of the same on the line 8—8 of Fig. 4;

Fig. 9 is a similar view of the same on the line 9—9 of Fig. 4;

Fig. 10 is a plan view of the weave with part broken out;

Fig. 11 is a similar view of an individual pad and after relaxing the elastic threads on cutting the pad from the weave; and

Fig. 12 is a plan view of the weave after it is taken off the loom.

Garter pads or shields as heretofore constructed were made of two superimposed pieces cut from woven fabrics, one of the pieces being silk, satin or a similar material, and the other being of a lining material, the two pieces being fastened together by marginal rows of stitches which also fastened the ends of the leg encircling band and the upper end of the hose clasp band in position on the pad. This mode of manufacturing the pad or shield resulted in the waste of a large amount of fabric material from which the approximately triangular pieces were cut, and this mode also required the employment of skilled labor and the consumption of a large amount of work and time in cutting and sewing operations. With my invention presently to be described in detail the pads or shield are woven and fashioned as a single band or ribbon on a suitable loom and all that is required is to cut the band or ribbon transversely into the individual pads or shields.

The complete garter pad 10 shown in Fig. 1 is approximately triangular in shape and is provided with a concave top edge 11 and it gradually diminishes in width from the median line to the ends 12, which ends are provided with flaps 13 and 14 for receiving between them the ends of the leg encircling band 15. The band ends and the flaps 13 and 14 are fastened together by stitches 16 or other fastening means. At the middle of the lower portion of the pad 10 is formed a pocket 17 for receiving therein the upper end of the supporting band 18 of the hose clamp 19 of usual construction, the supporting band 18 being fastened to the pad by stitches 20 or other fastening means.

In weaving the pad 10 use is made of a pair of upper warps 30, a pair of lower warps 31 and an intermediate warp 32, of which the warp threads of the warps 30 and 31 are inelastic while the major portion of the warp 32 is formed of pairs of inelastic

warp threads 33 on one side of which are arranged elastic warp threads 34 singly which are held in stretched condition or under tension during the weaving of the pads. The elastic warp threads 34 are located on the side which forms the top edge 11 of the pad and which top edge is formed subsequently on relaxing the elastic warp threads 34, as hereinafter more fully explained. The weft thread 40 for binding the sets of warps 30, 31 and 32 is passed in the usual manner through the open sheds of the warps 30 and 31 by the use of the usual shuttle 41, as indicated in Figs. 2 and 3.

In order to weave the pad 10 with a widened portion at the middle and with the pad gradually diminishing in width from the said middle to the ends 12 thereof, use is made of a reed 50 having its reed plates 51 spaced farther apart at the top than at the bottom so that on beginning the weaving of the pad at one narrow end the warps pass through the lower portion of the reed, as shown in Fig. 2, and during the further progress of the weaving, the reed 50 is gradually raised until the wide middle portion of the pad is reached, and then the reed 50 is gradually moved downward during the further weaving to finally reach the lowermost position on reaching the other narrow end 12 of the pad. This operation is repeated for each successive garter pad woven by the loom. The several warps unwind from the usual warp beam (not shown) and the woven fabric passes between two rollers 55 and 56 to hold the woven fabric under tension. The final weave when removed from the loom assumes a ring shape, as indicated in Fig. 12, owing to the relaxing of the elastic warp threads 34 whereby the upper edge 11 of each pad 10 assumes a concave shape, as will be readily understood by reference to Figs. 1 and 12. As shown in the drawings, three elastic warp threads 34 are used but I do not limit myself to this particular number as the same may be varied. Each inelastic warp thread 33 is formed of a number of threads to permit of dividing the same into branch warp threads 35, 36, as shown in Figs. 4 and 9, when forming the pocket 17 indicated in Figs. 1 and 4. It is understood that by the arrangement described a two-ply fabric is woven with the intermediate warp 33 interwoven therewith and intermediate the plies, as will be readily understood by reference to the drawings.

While weaving the end portions 12 the flaps 13 and 14 are formed, and while weaving the middle portion of each pad the pocket 17 is formed at the edge opposite the one containing the elastic warp threads 34.

After the fabric is woven and removed from the loom it is cut along the narrowest portions, as indicated by the line 60 (see Fig. 12) to form the individual pads 10. When cutting the fabric along the line 60 the ends of the elastic warp threads 34 between the flaps 13 and 14 relax completely and become thickened at the junction of the flaps 34 so that each elastic warp thread 34 is locked in place within the body of the garter pad 10 (see Fig. 11).

The pockets 17 may be omitted and instead a longitudinal slit 70 is woven in the fabric at the middle portion thereof, as plainly indicated in Fig. 11, to permit of looping the band 18 of the hose clamp 19 on the lower middle portion of the pad 10 instead of sewing it thereon within the pocket 11, as above explained.

It is understood that the side edges of the weave are provided with the usual woven edges or selvedges 80 and 81, is plainly indicated in Fig. 4, to strengthen the pad and to prevent unraveling thereof.

The ends 12 of the pad may be woven in tubular form in the usual manner instead of the two flaps 13 and 14.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The herein described method of weaving approximately triangular garter pads having the upper edges concave which consists in providing top and bottom sets of warps formed of inelastic warp threads and an intermediate warp having inelastic warp threads and at one side a number of elastic warp threads, the said intermediate warp being interposed between the said sets of inelastic warps, moving the warp threads in each warp gradually from each other and then gradually toward each other, and interweaving the said warps with weft threads to form a multiply fabric gradually decreasing in width from the median line to the ends thereof.

2. The herein described method of weaving approximately triangular garter pads having the upper edges concave, which consists in providing top and bottom sets of warps formed of inelastic warp threads and an intermediate warp having inelastic warp threads and at one side a number of elastic warp threads, the said intermediate warp being interposed between the said sets of inelastic warps, moving the warp threads in each warp gradually from each other and then gradually toward each other, interweaving the warps of the sets of inelastic warp threads with each other by weft threads at the beginning and end operations, and interweaving the said inelastic and elastic warp threads intermediate the beginning and end portions by the said weft threads to form a piece of fabric having a solidly woven main portion and each end portion in separate parts.

3. The herein described method of weaving approximately triangular garter pads

having the upper edges concave, which consists in providing top and bottom sets of warps formed of inelastic warp threads and an intermediate warp having inelastic warp threads and at one side a number of elastic warp threads, moving the warp threads in each warp gradually from each other and then gradually toward each other, interweaving the said warps with weft threads to form a multiply fabric gradually decreasing in width from the median line to the ends thereof, dividing a number of the warp threads of the intermediate warp, and interweaving the said divided warp threads with the sets of the top and bottom warp threads at the wide middle portion of the weave to form a pocket therein.

WILLIAM ACHTMEYER.