O. MINKOS.

STOCKING.

APPLICATION FILED SEPT. 20, 1913.

1,172,622.

Patented Feb. 22, 1916.

2 SHEETS—SHEET 1.

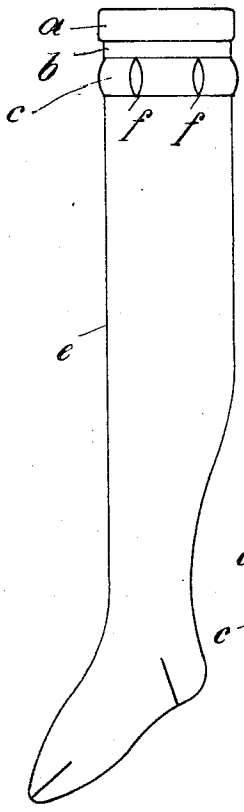


Fig. 1.

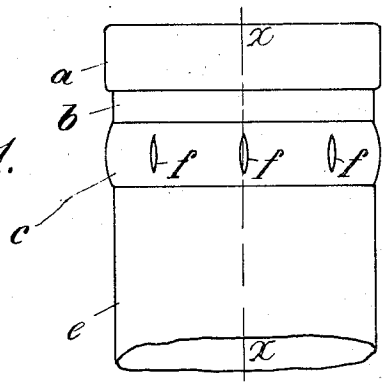


Fig 2.

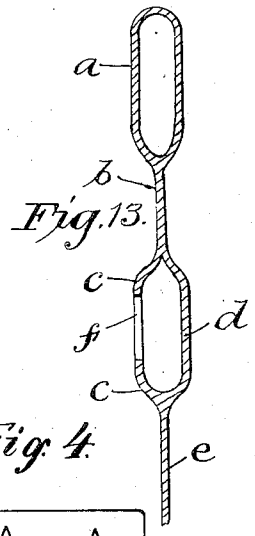


Fig. 13.

Fig. 3.

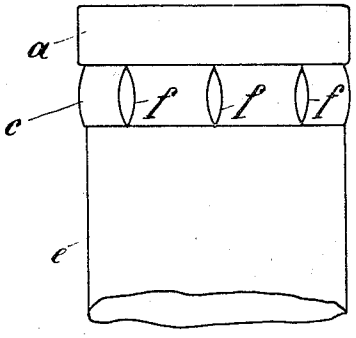


Fig. 4.

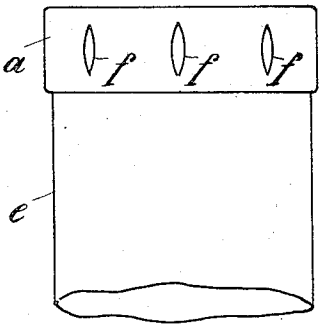


Fig. 5.

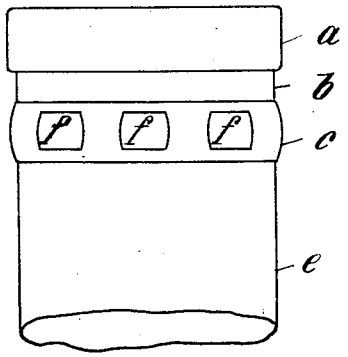
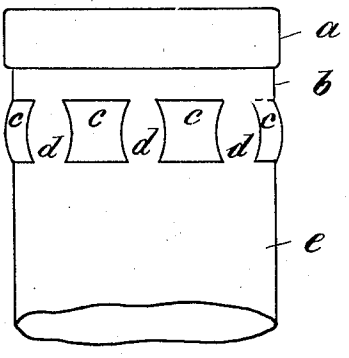


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 7.

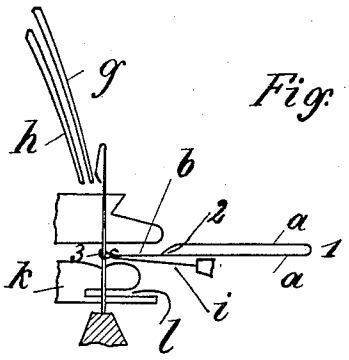


Fig. 8.

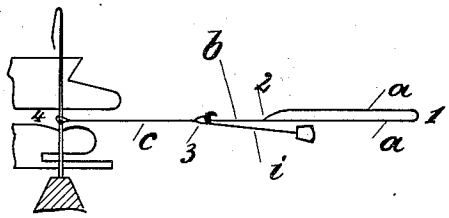


Fig. 8a.

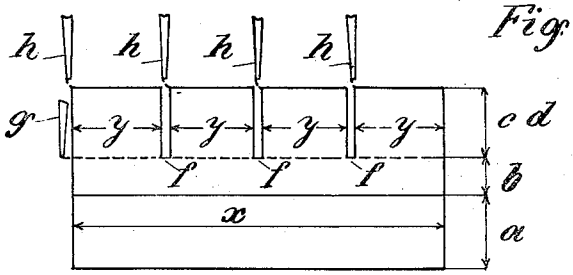


Fig. 9.

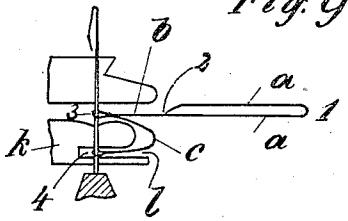


Fig. 10.

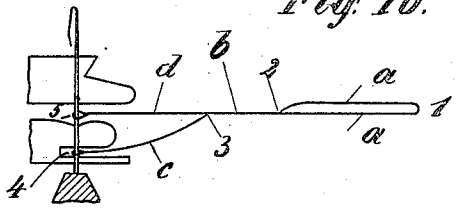


Fig. 11.

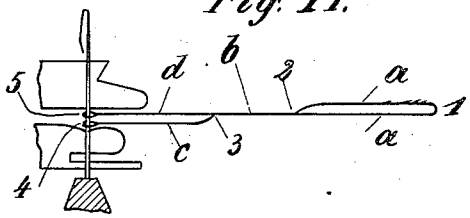
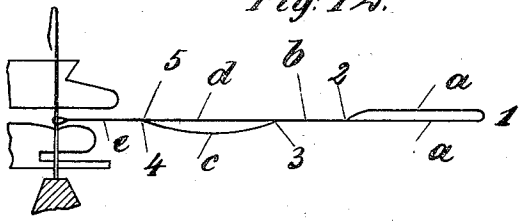


Fig. 12.



Witnesses:

E. K. Foote, witness

W. Köhler

Inventor:

Oskar Minkos.

UNITED STATES PATENT OFFICE.

OSKAR MINKOS, OF THALHEIM, GERMANY.

STOCKING.

1,172,622. Specification of Letters Patent. Patented Feb. 22, 1916.

Application filed September 20, 1913. Serial No. 790,948.

To all whom it may concern:

Be it known that I, OSKAR MINKOS, a subject of the Emperor of Germany, residing at Thalheim, Erzgebirge, Saxony, Germany, have invented new and useful Improvements in Stockings, of which the following is a specification.

The present invention relates to improvements in stockings having adjacent the upper end a double walled section and consists in providing such a stocking with means adapted to serve for connecting a garter or suspender with the stocking. The double walled section of the stocking is united with the body in a seamless manner and has a continuous inner wall that prevents contact of the garter or suspender with the leg of the wearer.

In the accompanying drawings, Figure 1 is an elevation of a stocking constructed in accordance with the present invention; Figs. 2 to 6 illustrate modifications; Figs. 7 to 12 illustrate diagrammatically the method followed in knitting the stockings illustrated in Figs. 1 to 6; and Fig. 13 is a sectional view, on an enlarged scale, substantially on the line *x*—*x* of Fig. 2, showing the double walled sections of the stocking distended.

Referring particularly to Figs. 1 to 6 and 13, it will be seen that each of the forms of stocking illustrated is provided at the upper end of its body *e* with a hollow hem *a* and in all of said forms except that of Fig. 4, a second double walled section is provided. In the forms illustrated in Figs. 1, 2, 5, 6, and 13, the two double walled sections are separated by a band *b* of single thickness.

In all of the forms illustrated the stocking has a double walled section comprising a continuous inner wall and a plurality of exterior loops through which a garter may be drawn or with which a suspender may be connected.

In the forms shown in Figs. 1 to 5 inclusive, the loops referred to are formed by making openings in the outer wall of the double walled section, the inner wall *d* extending continuously about the stocking. The openings *f* in the outer wall *c* may extend through substantially the full width of the double walled section, as shown in Figs. 1 and 3, or to be shorter than the height of said section, as shown in Figs. 2, 4 and 5 and as will be seen by comparing Fig. 5 with Figs. 1 to 4, the shape of said openings *f* may be varied.

In the form illustrated in Fig. 6, the outer wall *c* of the double walled section adapted to receive a garter is formed by separate loops produced in a seamless manner on the body of the stocking. It will be evident that the double walled section for the garter may be provided at any suitable point in the length of the stocking, being shown at the extreme upper end in Fig. 4 and below the hollow hem in the forms shown in Figs. 1, 2, 3, 5 and 6.

The method employed in producing hollow hems of the kind hereinbefore described, when the stocking is made on a flat knitting frame, consists essentially in forming the wall which is not to be provided with garter openings, with a single thread which travels over the full breadth of the stocking, while the other wall, which is to be interrupted at intervals by openings, is made, in the manner known for other purposes, with as many threads—running only from one opening to another—as there are to be openings or loops situated between said openings, while in the event that the welt forming the upper end of the stocking is not provided with openings for the garter, the outer wall is made first and the last row of meshes of same is then held on the frame needles below the lowest position of repose of these latter, until the inner wall has been worked. This method of working is illustrated in Figs. 7 to 12, for the form according to Fig. 1 as will now be described. The known welt *a* is worked first, and then the succeeding plain knitted portion *b*, this being done by the aid of a thread carrier *g*, which is led continuously over the full breadth of the stocking leg (Figs. 7 and 8^a). The last row of *b* is worked as a slack course 3 (Fig. 7), in which a hook comb *i* is inserted. Next part 3 to 4 of the outer wall *c* of the hollow hem for the garter is made (Fig. 8), for which purpose the thread carrier *g* is replaced by a rod with thread carriers *h*, the number of which is equal to that of the hollow hem parts in the breadth *y* (Fig. 8^a), intended to be produced side by side. Hence these thread carriers *h* traverse only the distance *y*, the openings *f* being produced, for instance, by leaving one or more frame needles between *y* empty.

In order to work the rear wall of the hollow hem, after the outer wall *c* of same is finished, without having to doff *c* from the frame needles, the last row of meshes, 4,

of *c* is brought below the lowest position of repose of the frame needles, by swinging the needle bar forward in the known manner, and then pushing *c* down a little so that when the needle bar is put in again *c* rests in a recess 1, provided for this purpose in the knocking-over comb *k*, whereupon the slack course 3 is brought on to the frame needles by means of the hook comb still suspended in it (Fig. 9). The rear wall *d* of the hollow hem is now worked—after the thread carriers *h* have been thrown out of action—by means of the thread carrier *g*, which traverses the full breadth of the ware; that is to say, the part *b* of the stocking leg is to some extent continued, during which time the part or parts *c* are retained at *l* (Fig. 10), the edges of the parts *c* and *d* being connected together at 3. After the part *d* extending from 3 to 5 is finished, the row of meshes 4 of the part *c* is again brought up to the part *d* Fig. 11 whereupon the forming of these two parts *c* and *d* is effected at the end courses 4 and 5, by continuing the method of working adopted in the case of *d*, and working the part *e* of the stocking (Fig. 12). The first row of this part joins together the two rows of meshes 4 and 5, which are to be knocked over together, from the frame needles. If the hollow hem is to be provided with larger openings, for instance of the kind according to Figs. 5 and 6, all that is necessary is to shorten the travel of the thread carriers *h* (Fig. 8[a]), thus lessening the breadth *y* of the parts *c*, but increasing the breadth of the gaps between them. When the openings are not intended to extend over the full breadth of the hollow hem, as shown in Figs. 1, 3 and 6, but only over a portion of same as illustrated in Figs. 2, 4 and 5, the edges thus left are worked with the aid of the thread carrier *g* which travels over the whole width of the set needles. The same method is adopted in forming the welt into a hollow hem (Fig. 4), except that the hem is formed by turning over the commencement of the ware, as is the usual practice with welts.

It will be seen that by all of the different embodiments of the invention illustrated a stocking is provided with a plurality of integral exterior loops, formed during the knitting operation; and that in every instance the inner walls of said loops extend continuously about the stocking.

No claim is herein made to the method employed in producing the improved stocking nor are all of the forms of the invention illustrated specifically claimed herein.

What I claim then is:—

1. A stocking provided adjacent its upper end with a double walled section comprising a plurality of exterior loops, adapted to serve as a means for connecting a garter or suspender with the stocking, and a continuous inner wall.

2. A stocking provided adjacent its upper end with a double walled section the inner wall of which extends continuously about the stocking and in the outer wall of which are formed a plurality of openings to provide means for connecting a garter or suspender with the stocking.

3. A stocking provided adjacent its upper end with a double walled seamless section comprising a plurality of integral exterior loops, adapted to serve as a means for connecting a garter or suspender with the stocking, and a continuous inner wall.

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

OSKAR MINKOS.

Witnesses:
C. K. Foote,
W. Köhler.