Sept. 6, 1932. H. M. McDONALD 1,876,311

COMBINATION GARMENT

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Fig. 1

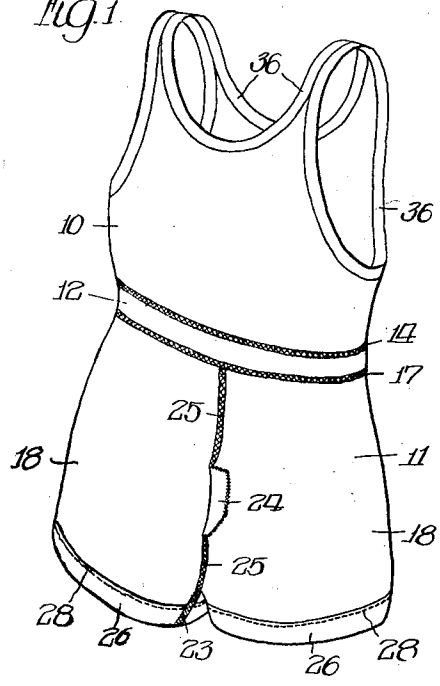


Fig. 2

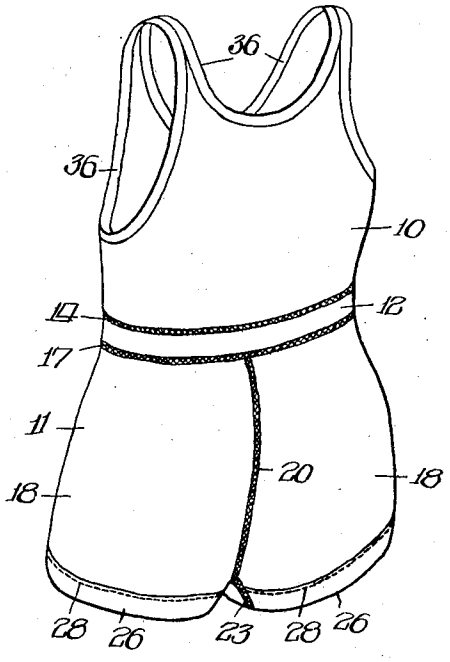


Fig. 13.

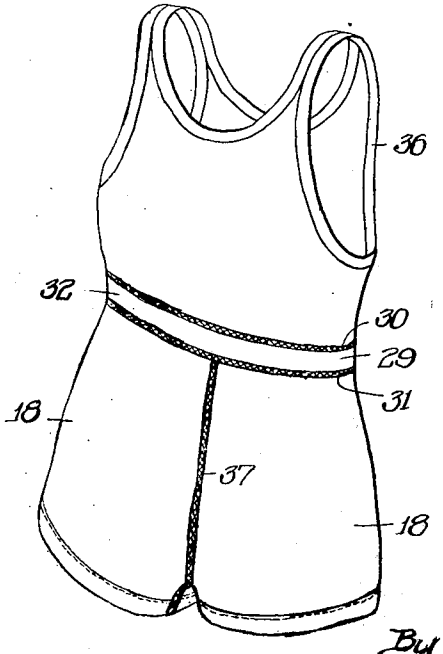
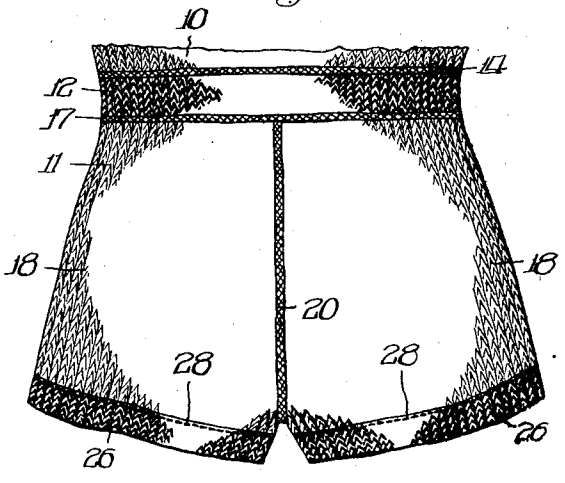


Fig. 3.



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COMBINATION GARMENT

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Fig. 4

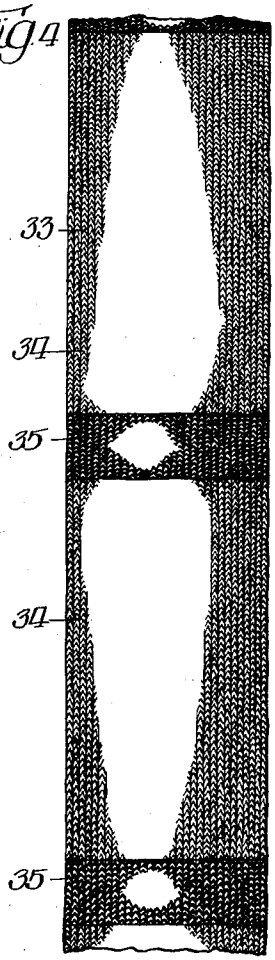


Fig. 5.

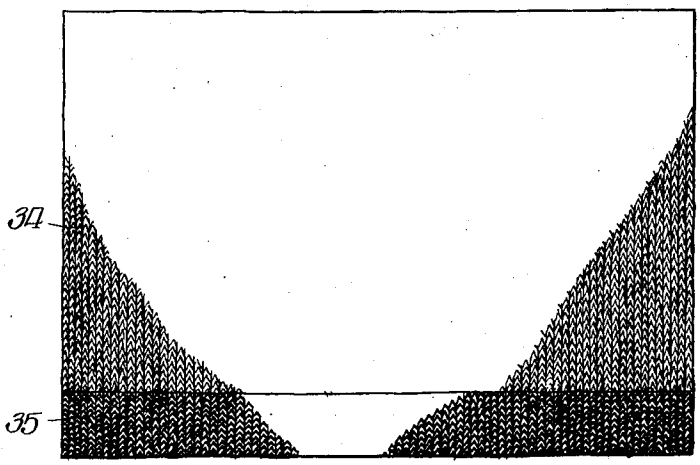


Fig. 8.

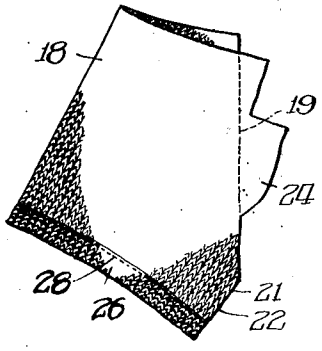


Fig. 9.

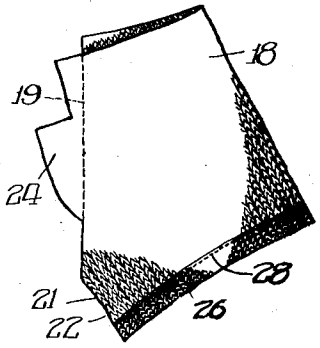


Fig. 10.

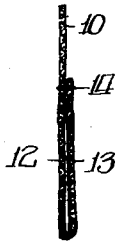
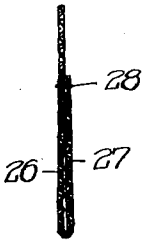


Fig. 11.

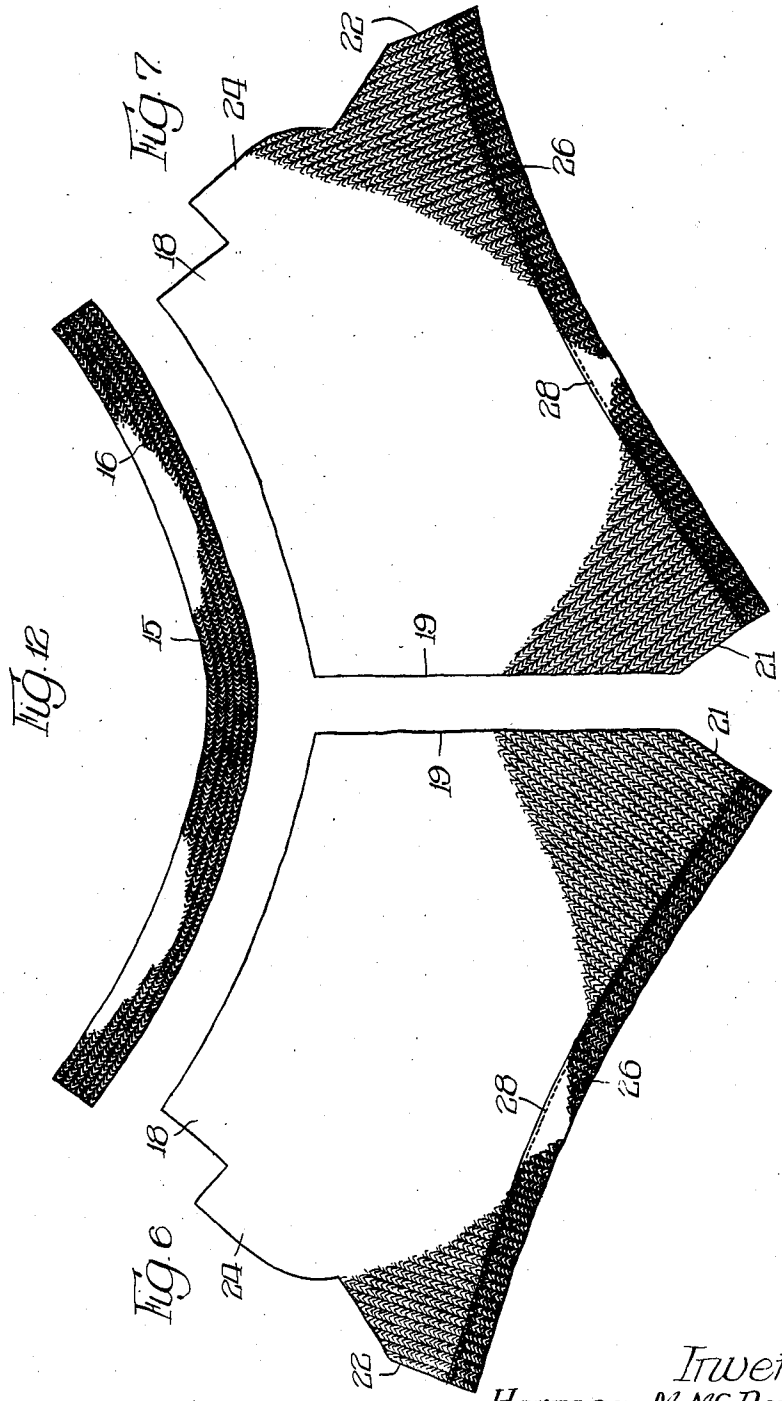


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COMBINATION GARMENT

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Patented Sept. 6, 1932 1,876,311

UNITED STATES PATENT OFFICE

HERMAN M. McDONALD, OF WILMETTE, ILLINOIS

COMBINATION GARMENT

Application filed May 27, 1932. Serial No. 613,884.

The present invention has to do with combination garments of the knitted type, being more particularly related to the form of garment covered by my copending application for Letters Patent of the United States Serial No. 597,651, filed March 9, 1932.

The garment of the aforesaid application is constructed to embody the desirable qualities of the present-day athletic shirt and so-called shorts. It is made, however, in the form of a combination garment, and thereby also possesses the advantages afforded by such suits. In this garment the leg members are formed of a plurality of sections individually cut and fit together, thus requiring excessive material and the expenditure of excess time in making the garment. The present invention aims to overcome these objections, and to provide a garment having greater elasticity to permit the same to be more readily stretched so as to conform to the body movements and positions.

It is also an object of the invention to provide a novel method of manufacturing the garment hereinbefore referred to by which economies in cost of production are effected, the garment resulting therefrom having novel form and characteristics by which the same is distinguished from the conventional garment of this general type heretofore manufactured and sold.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel construction, combination and arrangtment of parts, and the novel method of manufacture, hereinafter fully described, illustrated in the accompanying drawings, and finally pointed out in the appended claims.

In the drawings,

Fig. 1 is a perspective view of a combination garment embodying the features of the present invention, viewing the same from the front of the garment;

Fig. 2 is a similar view, looking at the garment from the rear side;

Fig. 3 is a rear elevation of the pants portion of the garment, on an enlarged scale, illustrating the disposition of the wales of the fabric;

Fig. 4 is an elevation of a fabric tube specially knitted to provide the material from which certain portions of the present garment are made;

Fig. 5 is a plan view of the blank produced from one of the sections of the tube shown in Fig. 4 after its severance from the tube and after having been slitted at one of its edges and opened to flat form;

Figs. 6 and 7 are similar views of the right and left leg members, respectively, of the pants as cut from the blank shown in Fig. 5;

Figs. 8 and 9 are plan views of the right and left leg members shown in Figs. 6 and 7 after folding and in readiness to be sewn together;

Fig. 10 is a vertical cross section through the lower portion of the shirt illustrating one form of the waist band of the garment;

Fig. 11 is a similar view through one end of one of the legs of the pants;

Fig. 12 is an elevation of an alternative form of waist band;

Fig. 13 is a perspective view of a slightly modified form of the garment as the same is adapted for women's wear.

Referring now in detail to the accompanying drawings, the numeral 10 designates the shirt of the garment and 11 the pants thereof. These are formed of knit fabric, being produced preferably by tuck stitching in order to obtain the ornamental effect of the same.

Interposed between the shirt 10 and the pants 11 is a waist band 12. A desirable formation and embodiment of the band 12 is to fold under the lower edge of the shirt 10, as seen in Fig. 10, or double the same back on the inside of the body of the shirt to provide an inner wall 13 for the band. This gives double thickness to the band 12 and affords greater elasticity to the same to fit the garment to the body but permits the garment to yield to the body movements. The free edge of the inturned wall 13 is secured to the body of the shirt by a line of stitching 14. In such construction the wales of the band 12 and its inner wall 13 run vertically of the

band, being continuations of the wales of the body of the shirt.

An alternative form of waist band is illustrated in Fig. 12 and may be substituted for the form above described. This band 15 comprises a single strip that encircles the waist of the garment the ends of the strip being united, preferably at the front of the garment. The band 15 is of closely-knit tuck stitching, the wales extending horizontally or in the direction of the length of the band, so as to yield freely in the direction lengthwise of the garment. This permits the wales to separate and contract so as to impart the desired elasticity at the waist of the garment. The wales are designated at 16.

In order that the waist band 12 may be connected to the pants 11 a line of stitching 17 is employed between the lower edge of the band and the upper edge of the pants. Preferably, the stitching indicated at 14 and 17 is done by means of a flat lock stitch machine, thereby avoiding overlapping of the united edges at the seams and giving a raised appearance to the latter in general simulation of taping. The "seam and cover seam" may be employed in lieu of the flat lock stitch by substituting the appropriate machine for the flat lock stitch machine.

The pants 11 include a pair of complemental leg members 18. Each of these members has a straight vertical side 19 at the inner edge of its rear face, which vertical sides are seamed together, as at 20. The lower inner corners of the rear faces of the members 18 are cut at obtuse angles to the vertical sides 19, as at 21, said angular cut portions 21 being seamed to correspondingly cut portions 22 at the inner edges of the front faces of the members 18 so as to provide the inner seam of each leg portion, designated at 23. The inner edges of the front faces of the members 18 are provided with reinforcing fly members 24 folded upon and secured to the members 18, these edges being seamed together, as at 25, so as to close the leg members of the pants at the front of the garment with the exception of the fly.

The seams 20, 23 and 25 are formed by means of a flat lock stitch machine, and these seams, therefore, give a raised appearance in general simulation of taping, or the "seam and cover seam" may be substituted for the flat lock stitch.

At the lower end of each of the leg members 18 is provided a fashioned cuff 26. This not only affords a proper finish at the lower end of each of the leg sections, but said cuffs also permit the proper lateral distension of the leg members at their lower ends so as to adjust the leg members to the body and permit the natural functionings thereof. The cuffs are of double thickness, each being folded back upon itself to provide an inner wall 27 which is held to the outer wall by a line of stitching 28. By this construction greater elasticity is imparted to the cuffs to enable them to contract and maintain the shape of the leg members after being laundered. The cuffs 26 are formed by using the Swiss rib stitch, the cuffs 26 thus being integral with the body of the leg portions 18. To form the cuffs 26 requires merely transferring the fabric in the process of knitting so as to subject the same to the action of a Swiss rib attachment. In lieu of the integral cuff 26 of each leg, a separately-formed cuff of heavy knitted fabric may be substituted, in which event the separately-formed cuff will be stitched to the lower end of each leg by flat lock or other appropriate form of stitching.

The effect of forming the cuffs 26 by the employment of the Swiss rib stitch is to give to the cuffs capacity for free distension in the crosswise direction of the leg members to follow the distension of the leg members in such direction, and when the garment is subjected to laundering there is no distortion of the cuffs with respect to any of their wales, so that there is no consequent puckerings or irregularities in the lower ends of the leg portions. The legs, therefore, maintain proper fit upon the wearer and always present a sightly appearance at their lower ends.

In Fig. 13 is illustrated a slightly modified form of the garment shown in Figs. 1, 2 and 3, adapting the same for women's wear. Preferably, the waist band 29 is knitted separately to form a more tightly knit structure, and thus afford greater elasticity to the band 29 than the other portions of the garment. The band 29 is connected to the shirt and pants of the garment by lines of stitching 30 and 31, similar to the lines of stitching 14 and 17. The wales of the band 29 extend vertically of the garment, as at 32, thereby giving the band 29 capacity for yielding or distension crosswise of the garment, and this conforms the garment to the waist of the wearer when the garment is placed on the body.

It has been stated that the invention contemplates as one of its objects a novel method of manufacturing the garment above described by which economies in cost of production are effected, and the garment resulting therefrom possesses novel form and characteristics to distinguish the same from the conventional garment of this general type heretofore manufactured and sold. In Figs. 4 to 9, inclusive, is illustrated this novel method. Primarily, a tube 33, such as shown in Fig. 4, is knit on any suitable type of tubular knitting machine, said tube 33 including areas 34 formed by tuck stitching, which areas 34 alternate with areas 35 of Swiss rib stitching. Each of the tuck stitch areas is approximately 18 inches in length, while the Swiss rib areas are approximately three

inches in length. After the desired length of the tube 33 has been produced the same is severed crosswise into sections each of which includes one of the tuck stitch areas 33 and one of the Swiss rib areas 35. The cutting of these sections is at such a point that the Swiss rib area is at the lower end of the tuck stitch area. When the sections thus have been severed each of these sections is slit at one of its longitudinal edges and opened to flat form, as illustrated in Fig. 5. With the blank thus opened up a suitable pattern conforming in shape to the outline of the leg members illustrated in Figs. 6 and 7 is laid upon the blank and the latter cut in accordance with such outline, thereby resulting in the leg members shown in Figs. 6 and 7. As these members represent the right and left portions of the pants, it is obvious that the pattern conforms to such shape. After the leg members 18 have been produced in outline in the manner described each is folded upon itself, as shown in Figs. 8 and 9, and the leg members are then in readiness to be sewn together.

It is to be observed that in applying the pattern to the blanks the same is done so that in cutting the shape of the leg members 18 in conformation with the outline of the patterns, the straight vertical sides 19 of the leg members will extend at an angle to the line of the wales of the fabric, while the angular cuts at the inner corners of the members 18, effected as at 21, will be substantially parallel with the direction of the wales. This permits the proper rise to be obtained in the leg members 18 so as to give the proper fullness at the crotch of the garment and permit the formation of the inner seam 23 in accordance with that fullness.

The leg members 18 are seamed at the edges 19, at the angular cut corners 21 and 22, and the front edges likewise are seamed, as at 25, the fly members 24 being turned in and suitably stitched to the bodies of the members 18, whereupon the pants are completed and ready for stitching to the shirt portion of the garment.

In the formation of the shirt portion a fabric tube is knitted in the usual way on the desired type of tubular knitting machine, and this completed tube is then cut into sections of the desired length to impart to the shirt the required length. Each of these sections is cut out by application of suitable patterns in order to form the open neck and arm holes of the shirt, the edges of the neck and arm hole portions being taped, as at 36, to give the desired finish to the edges of the fabric.

A garment constructed in accordance with the foregoing requires no buttons for fastening the same in position on the body. It conforms to the shape of the body, and because of the knitted character of the fabric the same is distensible in lateral directions so as to be readily adjusted to the body and to conform to the various movements and positions of the body. It has no crotch closure or closure flap, and because of the readily distensible characteristics of the fabric the leg members 18 may be stretched to such an extent that each may be passed from one leg to the other about the torso, thus shifting the garment from side to side of the body as occasion may require.

The form of the garment illustrated in Fig. 13 is substantially the same as shown in Figs. 1, 2 and 3. The front of the leg members 18 have a continuous seam 37, and this garment is equally adaptable to the fit of the body and for the purposes recited in connection with the form shown in Figs. 1, 2 and 3.

If it be desired to impart to the seat portion of the pants the saddle seat construction as disclosed in the form of the garment covered by my copending application, Serial No. 597,651, filed March 9, 1931, it is obvious that the leg members 18 may be readily cut to conform to the saddle seat construction referred to and the elliptical-shaped insert incorporated in the seat portion of the members 18.

By forming the leg members 18 in the manner described, each member is constituted by a single blank of fabric. There is no seam at the outer side edges of the leg members, so that the fabric is continuous from the rear seam 20 to the front seam 25. This permits each leg member to be formed of a single piece, thereby economizing in the material employed and reducing the amount of waste to a minimum. Furthermore, by the formation of each leg member of a single piece, the time expended in cutting the member to shape likewise is reduced to a minimum. By the absence of the seams at the outer side edges of the leg members a greater degree of elasticity likewise is provided for each leg member, thus contributing to the easy distension of the leg members when they are stretched in order to conform to the body movements and positions.

I claim:

1. The method of forming a union garment from knitted fabric including areas of relatively open knit stitches and alternating areas of relatively close knit stitches, which consists in severing the fabric adjacent the close knit stitches into sections each of which includes an area of relatively open knit stitches and an area of relatively close knit stitches, cutting said sections to the required configuration to constitute complemental pants members with the relatively close knit stitches at the lower ends of the members, assembling and connecting complemental members and connecting their lower inner edges to define leg portions to constitute the pants portion of the garment, and then assembling the

pants portion with a shirt portion to complete the garment.

2. The method of forming a union garment from knitted fabric including areas of relatively open knit stitches and alternating areas of relatively close knit stitches, which consists in severing the fabric adjacent the close knit stitches into sections each of which includes an area of relatively open knit stitches and an area of relatively close knit stitches, cutting said sections to the required configuration to constitute pants members free of side seams in the completed form of such members and with the relatively close knit stitches at the lower ends of the members, folding the members upon themselves to position their edges at the front and rear faces of the garment when completed, assembling and connecting the complemental members, and connecting their lower inner edges to define leg portions to constitute the pants portion of the garment, and then assembling the pants portion with a shirt and belt portion.

3. A union garment of the class described, devoid of crotch openings and formed of knitted material free from fastenings for maintaining the same on the body of a wearer, comprising a shirt and pants, and a waist band interposed between the shirt and pants and formed of inner and outer walls, the lower end of the shirt being turned inwardly upon the body thereof to constitute said inner wall of the waist band, a line of stitching between the free edge of the turned-in portion of the shirt and the body of the wearer for fastening the turned-in portion to the body of the shirt, the pants including complemental members each of which comprises individual cut blanks of knitted fabric having an upper area of relatively open knit stitches and a lower area of elastic close knit stitches, said complemental members being joined together along inner meeting edges and the lower inner edges of said individual blanks being seamed together to define individual leg portions to form a closed crotch garment capable of wide distension and stretching to be passed from one leg to the other about the torso of the wearer.

4. A union garment of the class described formed of knitted material free from fastenings for maintaining the same in position on the body of a wearer and devoid of crotch openings, comprising a shirt portion and pants fastened to the shirt portion, the pants including complemental members each of which comprises individual cut blanks of knitted fabric having an upper area of relatively open knit stitches and a lower area of elastic close knit stitches, said blanks being folded and fastened together at their inner edges to form a closed crotch garment, the lower leg portion of the pants including the area of elastic close knit stitches being capable of wide distension and stretching to be passed from one leg to the other about the torso of the wearer.

5. A union garment of the class described formed of knitted material free from fastenings for maintaining the same on the body of the wearer, comprising a shirt portion and pants fastened to the shirt portion, the pants including complemental members each of which comprises individual cut blanks of knitted fabric having an upper area of relatively open knit stitches and a lower area of elastic close knit stitches, said complemental members being joined together along inner meeting edges and the lower inner edges of said individual blanks being seamed together to define individual leg portions to form a closed crotch garment capable of wide distension and stretching to be passed from one leg to the other about the torso of the wearer.

6. A short leg union garment formed of knitted material free from fastenings for maintaining the same in position on the body of the wearer and devoid of crotch closures, comprising a shirt and pants connected with the shirt, the pants being closed at the crotch and comprising complemental members each of which is constituted by a knitted blank adapted to be folded upon itself and to be free from seams at the outer edge of the member, said complemental members being connected together along a portion of their inner edges and each of said complemental members having the remaining portion of their inner edges seamed together to provide individual leg portions, said leg portions having at the bottoms thereof an elastic close knit area to provide a close fitting leg portion which is capable of wide distension and stretching to be passed from one leg to the other about the body of a wearer.

In testimony whereof I have hereunto subscribed my name.

HERMAN M. McDONALD.