

Sept. 7, 1965

KYUZO SATO

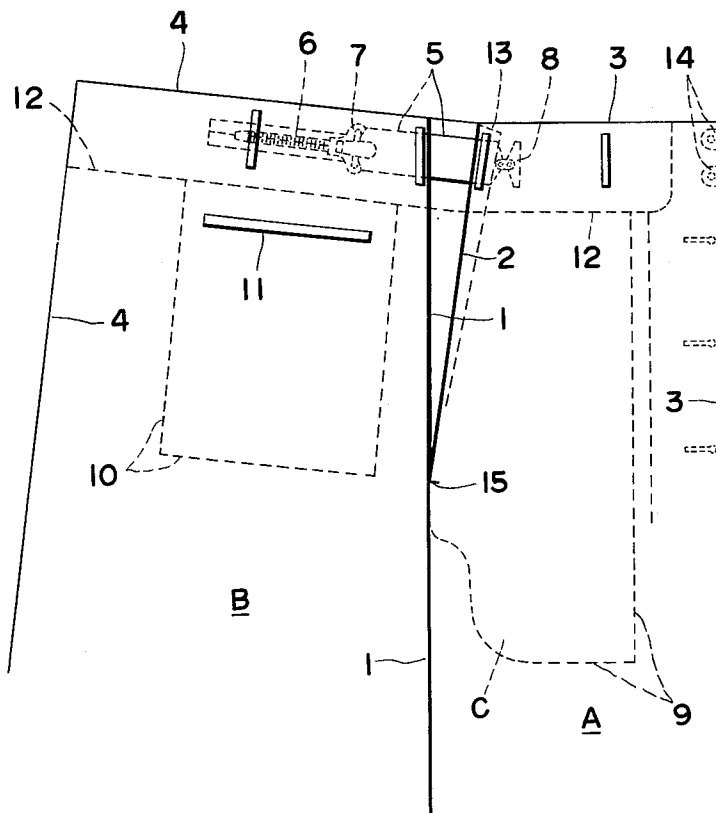
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TROUSER WITH ADJUSTABLE WAIST SIZE

Filed Dec. 17, 1962

8 Sheets-Sheet 1

FIG. 1.



Sept. 7, 1965

KYUZO SATO

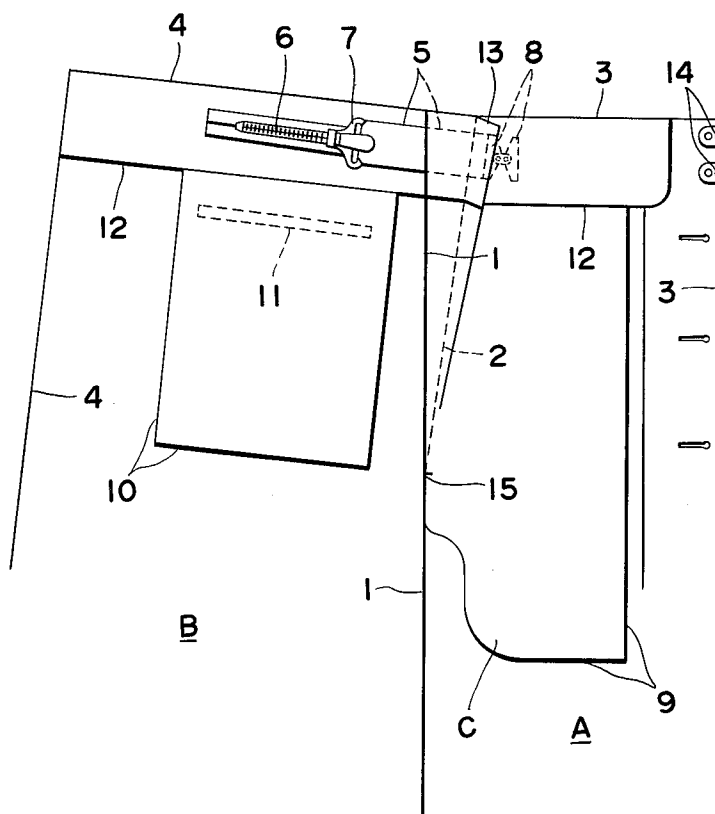
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Filed Dec. 17, 1962

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FIG. 2.



Sept. 7, 1965

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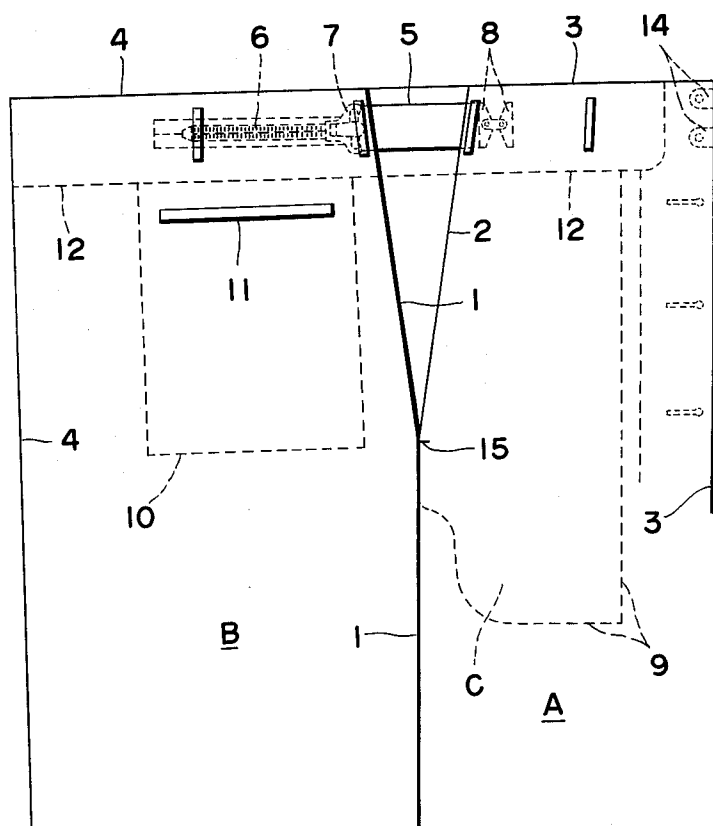
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Filed Dec. 17, 1962

8 Sheets-Sheet 3

FIG. 3.



Sept. 7, 1965

KYUZO SATO

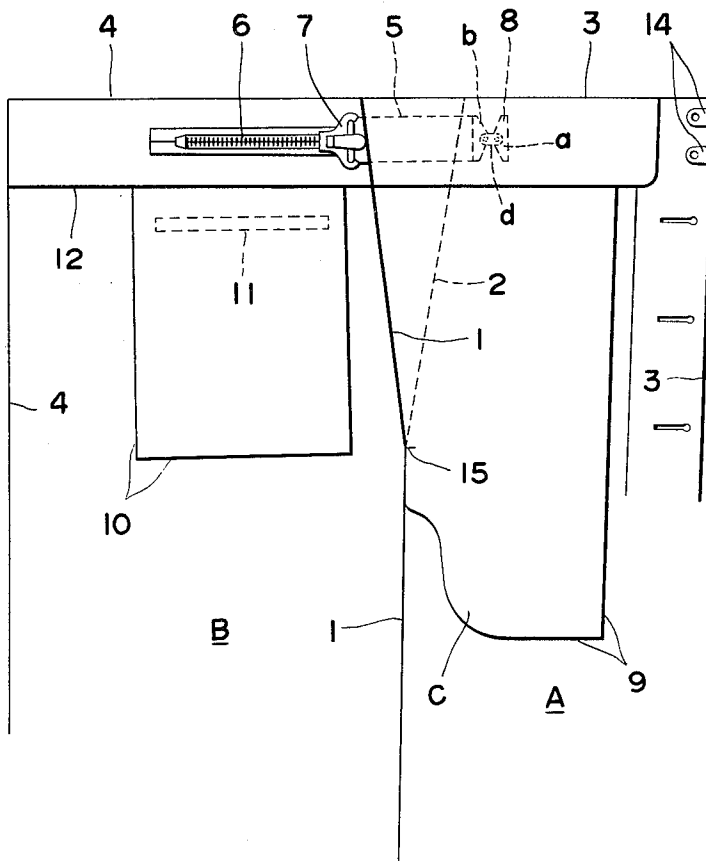
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Filed Dec. 17, 1962

8 Sheets-Sheet 4

FIG. 4.



Sept. 7, 1965

KYUZO SATO

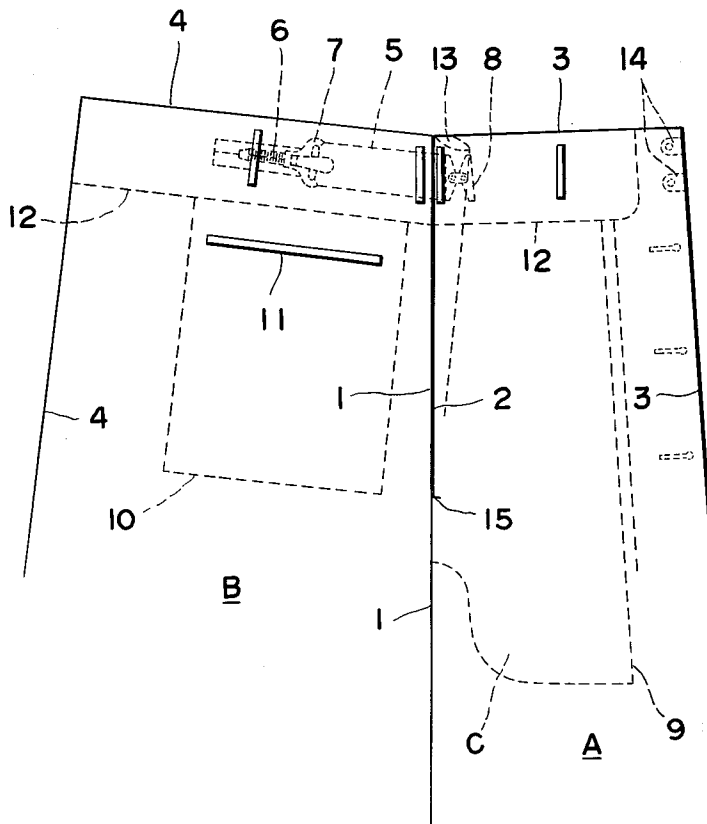
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TROUSER WITH ADJUSTABLE WAIST SIZE

Filed Dec. 17, 1962

8 Sheets-Sheet 5

FIG. 5.



Sept. 7, 1965

KYUZO SATO

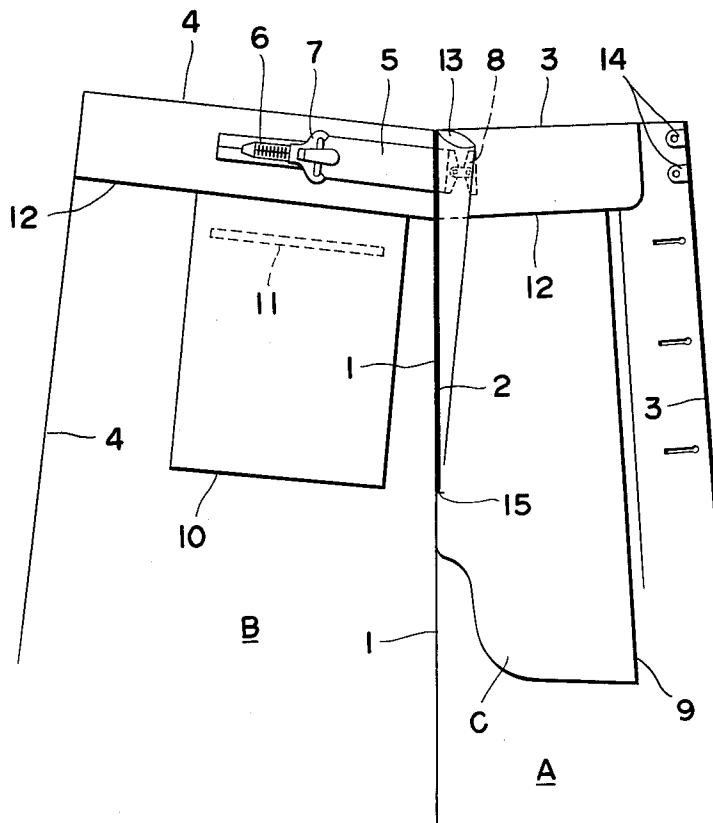
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TROUSER WITH ADJUSTABLE WAIST SIZE

Filed Dec. 17, 1962

8 Sheets-Sheet 6

FIG. 6.



Sept. 7, 1965

KYUZO SATO

3,204,253

TROUSER WITH ADJUSTABLE WAIST SIZE

Filed Dec. 17, 1962

8 Sheets-Sheet 7

FIG. 7

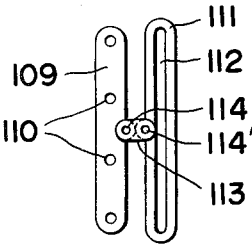
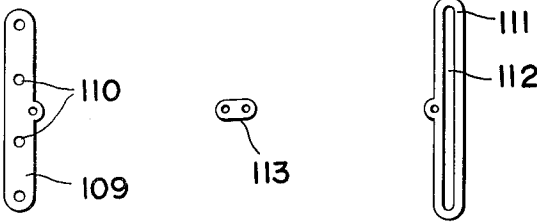


FIG. 8



FIG. 9



Sept. 7, 1965

KYUZO SATO

3,204,253

TROUSER WITH ADJUSTABLE WAIST SIZE

Filed Dec. 17, 1962

8 Sheets-Sheet 8

FIG. 10

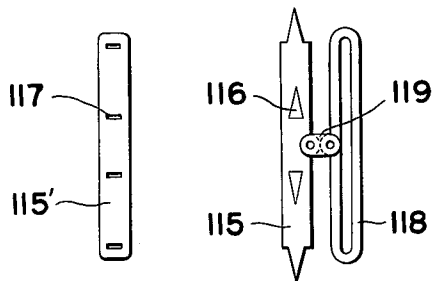


FIG. 11

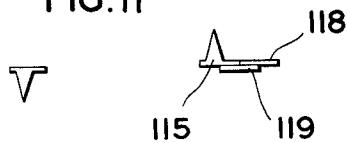
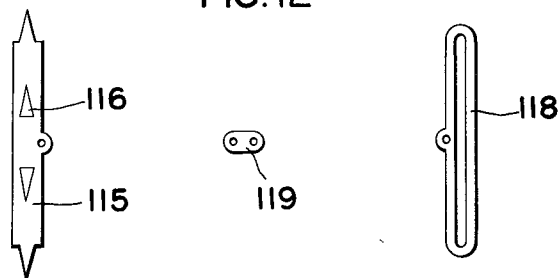


FIG. 12



1

3,204,253

TROUSER WITH ADJUSTABLE WAIST SIZE
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Claims priority, application Japan, Dec. 26, 1961,
(utility model), 36/64,228; (utility model),
36/64,229; Sept. 4, 1962 (utility model), 37/50,495;
Sept. 13, 1962 (utility model), 37/39,602

1 Claim. (Cl. 2—237)

This invention relates to lower body covering garments, such as trousers, which are so made that their waist size is adjustable.

It is usual, in conventional trousers with adjustable waist size, to make the upper portion of both sides of the trousers with front and back panels that are free to be adjustably overlapped along the edges of the side pockets, and to adjust the position where the both panels are fastened together with an appropriate metal clasp. However, such trousers have the shortcoming of spoiling their own appearance, as the above-mentioned fastening metal clasp is exposed outside when both panels are fastened together in an expanded position. Also such trousers are subject to the disadvantage that, due to the methods of construction, the upper portions of the side pockets are not fastened when the trousers are hung, thereby causing articles in the pockets to drop out.

The present invention is directed to a lower body covering garment, having an adjustable waist band and having good style characteristics, characterized by the fact that there are no exposed metal fastening elements. Furthermore, the garments made according to the present invention are comfortable to wear and do not have an awkward appearance, such as the presence of wrinkles and creases, which are characteristic of known adjustable waist band garments.

To these ends, the adjustable waist band garment of the present invention is characterized by comprising a front panel and a rear panel, with the front panel having side pockets extending forwardly from its side edges and with each side pocket having an outer wall and an inner wall. The outer and inner pocket walls are joined at their upper, lower and forward edges, and the corresponding side edges of the front and rear panels are joined to each other along lines extending upwardly to points spaced from the upper edges of the panels by a distance of the order of the depth of the side pockets. The corresponding side edges of the front and rear panels are free of each other above these points.

A feature of the invention is that the side pocket inner walls extend rearwardly beyond the rear edges of the outer walls, and the rear edges of the side pocket inner walls are joined to the side edges of the rear panel to form substantially triangular expansion gussets, each extending from an apex at one of the mentioned points to a base connecting the panel top edges. A waist band is secured along the inner surfaces of the panels and the gussets adjacent the top edges, and the waistband has slits therein aligned with the junctions of the side pocket inner walls and the respective side edges of the rear panel.

The adjusting means which interconnects the front and

2

rear panels is positioned at the waist band, and comprises a strap having an articulated connection, at one end, to the associated front panel forwardly of the rear edge of the associated side pocket outer wall, and enclosed between the side pocket outer wall and the waist band. Each strap extends in overlapping relation with the surface of the associated gusset and through the associated slit in the waist band. The free end of each strap has a longitudinally adjustable interconnection with an interconnecting element secured on the exposed surface of the waist band extending along the rear panel rearwardly of the rear edge of the side pocket inner wall. Each articulated connection includes a first member secured to the front panel, a second member secured to the adjacent end of the strap, and means pivotally interconnecting these members. Thereby the longitudinally adjustable interconnection is accessible on the inner surface of the garment for adjusting the effective length of the waist band of the garment. The adjustable interconnection may include slide fastener means.

For an understanding of the principles of the invention, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawings.

In the drawings:

FIG. 1 is a partial outside elevation view of a pair of trousers embodying the invention, with the waist band being shown partly expanded;

FIG. 2 is a partial inside elevation view corresponding to FIG. 1;

FIG. 3 is a view similar to FIG. 1 and illustrating the waist band as fully expanded;

FIG. 4 is a partial inside elevation view of the trousers, corresponding to FIG. 3;

FIG. 5 is a view, similar to FIG. 1, but illustrating the waist band fully contracted;

FIG. 6 is a partial inside elevation view corresponding to FIG. 5;

FIG. 7 is a front elevation view of an articulated metal fitting included in the waist band adjusting and interconnecting means;

FIG. 8 is a top plan view of the fitting shown in FIG. 7;

FIG. 9 is an exploded view of the fitting shown in FIGS. 7 and 8; and

FIGS. 10, 11 and 12 are views, generally corresponding to FIGS. 7, 8 and 9, illustrating a modified form of articulated metal fitting.

A pair of trousers embodying the invention is shown in FIGURES 1 through 6, wherein front body or panel A and rear body or panel B are sewed together up to the bottom 15 of the edge of side pocket C along the side sewing line 1. Above that point the both bodies A, B are freely adjustable about the cardinal point, the bottom of the pocket edge, and adjusting of waist size is effected by increasing and decreasing the degree of overlapping of the front body or panel over the rear body or panel. The upper portion of the side pocket is closed even when the waist is expanded to the maximum. Overlapping of panels A, B is held to the minimum, as shown in FIGURES 3 and 4, as both panels are connected together by the waist lining 12 which is sewed to the insides of the both bodies. When the waist is expanded to the maximum, the waist lining 12 is stretched out, and as the waist is tightened

the overlapping of the panels increases and, at the same time, the excess length of the waist lining thus created is formed into pleats. When the waist is tightened to the minimum, the rear side edge of the front panel will, of course, come right to the side sewing line.

In the drawings, 2 is the pocket opening line of the front panel, 3 is outline of the front panel, 4 is the outline of the side pocket. The opening line of the side pocket is sewed to the side edges of both the front panel and the rear panel. 10 is the outline of the rear pocket, 11 is the rear pocket opening, and 13 shows the overlapped portion of the waist band caused by tightening of the waist band.

In the above, the front panel A moves about the cardinal point, the bottom edge 15 of the side pocket, from normal position shown in FIGURES 1 and 2 to the expanded position shown in FIGURES 3 and 4, and to the tightened position shown in FIGURES 5 and 6. In this case however, since the pocket opening line 2 makes a circular motion around edge 15, the edge of the tab makes a circular motion instead of a straight line motion, if the waist tab 5 is simply fixed to the front body, and, as a result, the adjusting of the waist becomes unnatural, the shape of trousers is lost, and the appearance is spoiled.

Therefore, one end of the waist tab 5, which adjusts expanding and tightening of the waist, is attached to the inside of the front panel at an appropriate position inside the tube formed by the waist band, with the jointing metal fitting 8 which enables the edge of waist tab 5 to move in a straight line. A metal clasp 7 is fixed to the other end of the tab 5, and the clasp 7 can be fastened to a slide fastener (zipper), which is firmly fixed to an appropriate position on the inside of rear panel, arranging itself parallel to the upper edge of the panel, in any desired position of the straight line of the fastener. That is, the jointing metal fitting 8 can be made of two parts, one being a fitting *a* fixed to the panel by sewing on or by other fastening methods, the other being a fitting *b* to which one end of the waist tab is attached. Both fittings are so pivotally interconnected that they can be freely rotated in a plane. Alternatively, fitting 8 can be made of three parts, i.e., fitting *a*, fitting *b* and middle fitting *d*, to the opposite edges of which fittings *a* and *b* are pivotally connected. When the fastener 6 is attached to the inside of back body, the tab 5 is inserted through a slit in the waist band.

Metal clasp 7, while it is engaged with the fastener 6, is moved along the length of the fastener, and the clasp 7 is fixed relative to the fastener 6 at its appropriate position. 14 is the fly clasp. In the drawing, the hook portion of the fly clasp is made of two hooks 14' placed on one metal body and positioned parallel in one row, and the clasp portion (not shown), to which the hook is adapted to be secured, is also made of two clasps built in one metal body and arranged parallel in one row.

The details of the metal fitting for adjusting the waist size will be described with reference to FIGURES 7 through 12.

In FIGURES 7 through 9, 109 is a long metal fitting fixed longitudinally to the padding of the waist of front panel 106, and is sewed on by means of its holes 110. 111 is a long metal fitting, and through its slot 112 the base end of the waist tab 5 is inserted and fastened. Metal fittings 109 and 111 are, by means of apertured ears in the middle of their sides, connected by pins 114, 114' to the ends of metal link 113, which extends between them.

That is, metal fitting 109 and metal fitting 113, as well as metal fitting 113 and metal fitting 11, are so connected that the both metal fittings are freely rotatable around the axes of pins 114 and 114' respectively. Thus, in spite of relative movement of the front body corresponding to adjusting the waist size, the waist tab moves in a straight line.

The free end of waist tab 5 may thus move on a straight line along the portions of the rectilinear connecting means fixed to the back panel and extending parallel to the upper edge thereof. This portion of the adjusting means may be of any desired rectilinear construction, which is either continuous or discontinuous. Thus, it may be a slide fastener, a series of hooks or buttons arranged along a line, or any similar arrangement. It should be understood that the two parts of the adjustable connection need not necessarily be arranged with the part 8 on the front panel and the part 6 on the rear panel, but that the position of these parts could be reversed. Also, instead of using the intermediate link 113, fittings 109 and 110 can be pivotally connected to each other.

FIGS. 10, 11 and 12 illustrate an alternative embodiment of the articulated waist adjustment means. Referring to these figures, instead of sewing a part 109 directly to the cloth of the garment, a two-part metal fitting may be used. Thus, and as shown particularly in FIGS. 10, 11 and 12, the fitting may comprise two parts, 115 and 115', the part 115 being formed with piercing tabs 116 arranged to be pierced through the cloth and inserted through slots 117 in the part 115' and bent over. The other element of the articulated interconnection comprises the part 118 which is substantially identical with the part 111, and the parts 115 and 118 may be pivotally interconnected by means of a link 119 or may be directly pivoted to each other, as previously described for the fitting shown in FIGS. 7, 8 and 9. However, the provision of the link 113 or 119 provides for a smoother and neater adjustment of the waist band size.

What is claimed is:

An expandable waist, lower body covering, garment comprising a front panel having opposite side edges and a top edge; a rear panel having opposite side edges and a top edge; said front panel having side pockets extending from its side edges, and each side pocket having an outer wall and an inner wall; the outer and inner pocket walls being joined at their upper, lower and forward edges; the corresponding side edges of said front and rear panels being joined to each other along a line extending upwardly to points spaced from the panel top edges by a distance of the order of the depths of said side pockets, and said corresponding side edges being free of each other above said points; the rear edges of the side pocket outer walls being joined to the corresponding side edges of said front panel; the side pocket inner walls extending rearwardly beyond the rear edges of the outer walls and the rear edges of the side pocket inner walls being joined to the side edges of said rear panel, to form substantially triangular expansion gussets each extending from an apex at one of said points to a base connecting said panel top edges; a waist band secured along the inner surfaces of said panels and said gussets adjacent said top edges, said waist band having slits thereacross aligned with the junctions of the side pocket inner walls and the respective side edges of the rear panel; and adjustable means interconnecting said front and rear panels at the waist band for adjusting the waist length of said garment between an expanded position, in which said gussets and said waist band is fully expanded, and a contracted condition, in which corresponding side edges of said panels are in substantial abutment and said gussets are pleated each of said adjustable interconnecting means comprising a strap having an articulated connection, at one end, to the associated front panel forwardly of the rear edge of the associated side pocket outer wall and enclosed between the side pocket outer wall and said waist band; each strap extending in overlapping relation with the outer surface of the associated gusset and through the associated slit in said waist band; the free end of each strap having a longitudinally adjustable interconnection with an interconnecting element secured on the exposed surface of the waist band extending along the associated rear panel

5

rearwardly of the rear edge of the associated side pocket inner wall; each articulated connection comprising a first member secured to the associated front panel, a second member secured to the adjacent end of said strap, and a link pivotally connected at each end to a respective one of said members; whereby said longitudinally adjustable interconnection is accessible on the inner surface of the garment for adjusting the effective length of the waist band of the garment.

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