

(No Model.)

W. GANZHORN.

DRESS MAKER'S MEASURE.

No. 263,779.

Patented Sept. 5, 1882.

Fig.1.

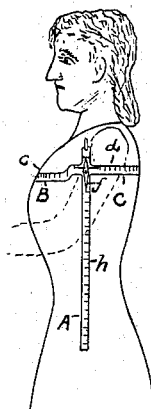


Fig.5.

Fig.2.

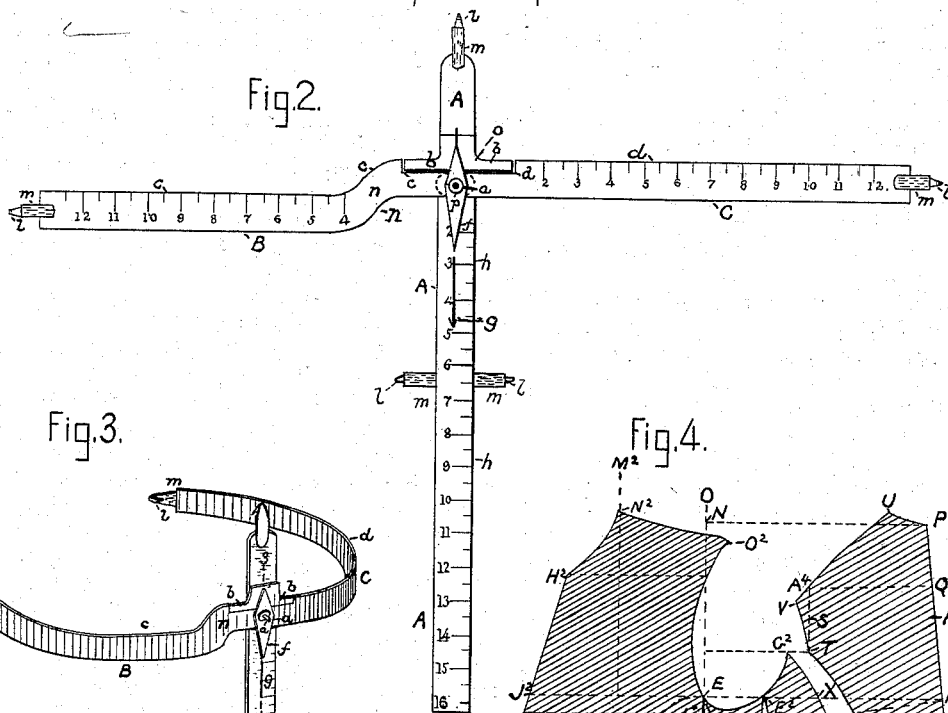


Fig.3.

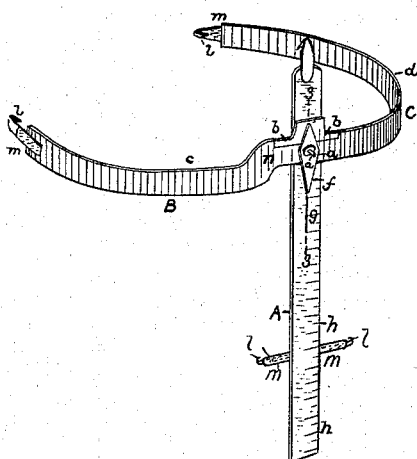
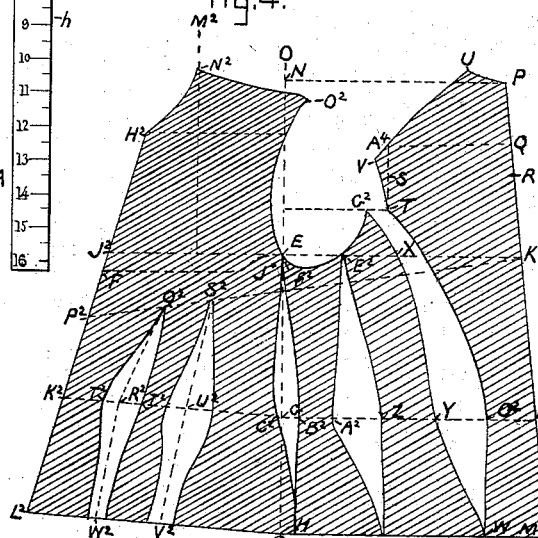


Fig.4.



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DRESS-MAKER'S MEASURE.

SPECIFICATION forming part of Letters Patent No. 263,779, dated September 5, 1882.

Application filed August 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GANZHORN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Methods of Measuring and Drafting Patterns for Garments, and implement to be used therefor, of which the following is a full, clear, and exact description.

This invention relates to a measure for garments; and it consists essentially in a measure composed of flexible bands, each graduated in its length, and attached together by a common center pin combined with a plumbing-point.

The invention will be first described in detail, and the improvements specifically set forth in the claims, a preliminary description being deemed unnecessary in view of the full, clear, and exact explanation which hereinafter appears.

In the accompanying plate of drawings, Figure 1 is a view in miniature, illustrating the garment-measurer of this invention in position upon and looking at the left side of the person. Fig. 2 is a view of the measurer at the graduated face of its several bands, which are laid out in their relative positions when in use. Fig. 3 is a perspective view. Fig. 5 is a sectional view in detail on line 3 3, Fig. 3. Fig. 4 is a view illustrating the plotting or drafting of a pattern from measures made with this measurer and under this system.

In the drawings, A, B, and C represent three bands, made of leather, card-board, or other flexible material, of a suitable width and length, and each preferably of the same width. These bands, for convenience in designation, are hereinafter called respectively the "side," "front," and "back" bands, and all of the bands at one end are hung about a common center-pin or pivot, *a*, attached to the side band, A, and passing loosely through the front and back bands, B C; and thus they are free to be swung one upon or about each other and placed at any desired angle to each other. P is a screw-nut on the center pin, which, when tightened against the bands, holds them against movement. The side band, A, has a raised lip, *b*, fixed to it in a line at right angles to its length, and in a position to make an abutment for the upper edges, *c d*, of the front and back bands, respectively, and secure their placement in lines

at right angles to the length of the side band. *f* is a pointer or index loosely hung upon the center pivot or pin, *a*, and suitably adapted and arranged to swing freely upon the pin *a* when the screw-nut is tightened against the bands, and to act in the nature of a plumb, and so, by means of a line, *g*, upon side band, A, running in a line parallel with the vertical edge *h* of said band, such edge can be plumbed with certainty in the use of the measurer, as will hereinafter appear. Each band has a hook or hooks, *l*, secured to it through an elastic band, *m*, for securing the band in place upon the person. The front band, B, commencing near the center pivot, *a*, has a downward bend or curve, *n*, for a short part of its length, as and for a purpose which will hereinafter appear; and thence it continues in a straight direction, and one parallel with the direction of the back band, C, when the two are at right angles to the side band. The three bands, when the front and back bands are at right angles to the side band, which is their working position, form the letter T, the side band constituting the leg or vertical bar and the front and back bands the cross or horizontal bar. The side band or leg is divided at and along its vertical edge *h* into a series of graduations in inches and parts of inches, running and numbered from the right angle *o* of intersection of upper edge, *d*, of back band with said edge *h* and toward the lower end of said band, and both the front and the back bands, B C, making the cross-bar, are divided at and along their upper edges, *c d*, respectively, into a series of graduations in inches and parts of inches, starting on each band from the graduated edge *h* of side band, A, at angle *o*, and numbered therefrom, the front band to the left and the back band to the right at their several graduations in inches, according to their respective distances from said edge in inches. As shown, the side band, A, has graduations in inches running from two to sixteen, inclusive, the front band, B, running from four to twelve, inclusive, and the back band, C, running from two to twelve, inclusive.

This measurer, as described, in use, as will hereinafter appear, is adapted for working from the front of the left shoulder.

In using this improved implement or garment-measurer its vertical or side band, A, is

placed with its graduated face to the front, against the left side of the person, and its edge *h* vertically against the front of the left shoulder, and the straight or back band, C, with its graduated face, is passed under the shoulder, through the armpit, to and horizontally across the back, and the horizontal or front band, B, (curved in a portion of its length,) horizontally as to its straight portion, to and across the front or chest and breast of the person, and having plumbed the side band, A, at its edge *h* against the shoulder by means of the pointer *f* and line *g*, the several bands, by their respective hooks *l*, are then fastened to the person, taking care that the front and back bands are at right angles to said vertical edge of the side band. Having thus secured the garment-measurer to the person, the measures are taken off as follows: First, the measures by mark of graduation at the upper edge of the front band, B, coincident with the center vertical line of body at front of person; second, same as to back of person on back band, C; third, the measure by mark of graduation on side band, A, along its edge *h*, which is against the shoulder, at the upper end of hip, giving the length of waist, and, also, fourth, at largest part of hip; fifth, the measure on a tape-measure from center pin, *a*, over shoulder as near as possible to arm, and back to upper edge of back band, C, at its graduation coincident with center vertical line of back; sixth, the measure on a tape-measure from center pin, *a*, over shoulder, to neck-bone at center vertical line of back; seventh, the measure on a tape-measure from center pin, *a*, to neck at center vertical line of front, according to the height which it is desired the garment shall have at that point; eighth, the measure on a tape-measure from center vertical line of body at waist to vertical edge *h* of side band, A, at the point where such edge intersects hip at its upper end, taking care that tape is horizontal, giving one-half of width of waist; ninth, the measure on a tape-measure from point of intersection of vertical edge *h* of side band, A, at upper end of hip, to center vertical line of back, taking care that tape is horizontal, giving one-half width of back; tenth, the measure on a tape-measure over largest part of hip from center vertical line at front of body to edge *h* of side band, A, and thence to center vertical line of back, taking care that tape is horizontal, giving one-half of hip measure; eleventh, the measure on a tape-measure from upper edge of back band, C, to neck-bone at back, at point where a measure was taken from center pin, *a*, as stated under the head of sixth measurement; twelfth, the horizontal distance on a tape-measure between center vertical line on back and a point midway between upper side of shoulder and armpit, giving width of back. These measures having been taken off, as described, they are drafted or plotted as follows, (see Fig. 4:) A straight vertical line, O O, is ruled to represent the vertical edge *h* of side band, A, and which is the working-line, and then the garment-measure is placed with said edge along said line and the front and back bands, B C, at right angles thereto, (the back band at right and front band at left,) and straight lines are drawn along upper edge of each of said bands, and on said lines are marked the measures made along or taken off said front band and said edge *h* to side band—to wit, the measures under the first, third, and fourth clauses of measures, and through such points horizontal lines are drawn at right angles to and to the right-hand side of said line O O, and the position of center pivot, *a*, is also marked. In this marking off and drawing of lines, E is the point of intersection of upper edge of back band, C, and vertical edge *h* of side band, A. F is the point of intersection of the upper edge of the front band, B, and the center vertical line of body. G is the point of intersection of vertical edge of side band and upper end of hip or narrowest part of waist. H is the point of intersection of vertical edge of side band and largest part of hip. J is the position of center pivot, *a*. E K is the horizontal line along upper edge of back band. E F is the (in part) horizontal line along upper edge of front band. G L is the horizontal line through point G. H M is the horizontal line through point H. On horizontal line H M the measure at largest part of hip is laid off from vertical edge *h* of side band, A, to center vertical line of back, giving point M. On working-line O O, from point E upward, the measure is laid off from upper edge of back band at its graduation coincident with center vertical line of back to neck-bone at back of neck, giving point N, and through this point N a horizontal line is drawn, N P, to right of and at right angles to working-line O O, and on such line is laid off the measure taken off the upper edge of back band at center vertical line of back, giving point P, and a straight line is drawn through this point P and point M, giving line P M. Now, on line P M, starting from point P and toward point M, one-third and one-half of the distance between points N and E are marked off on line P M, giving points Q and R, respectively, and through the point Q a straight line is drawn toward working-line O O at right angles to line P M, and at and from the point R toward working-line is projected (preferably without marking) at right angles to line P M the horizontal measure between center vertical line of back and a point midway between the upper side of shoulder and armpit, or the "width of back," giving point S, and through this point S a line is drawn square to line drawn through point Q. On working-line O O, at one-fourth distance between points N E, from point E to point N, a line is drawn at right angles to working-line, giving point T. On line N P, from point P toward point N, the width which back at neck is to have is measured, (this being a matter of taste and skill,) and from a point, U, at one-half of an inch

above such measure, a straight line is drawn to angle of lines Q and S and one-quarter of an inch beyond such point, giving point V, and from this point V to point T a line is drawn with a gradual curve and convexity toward the line S T for arm-size. From point T a curving line, T W, is drawn, with its convexity toward line P M, to line H M, meeting line H M at a point nearer than the point T is to the line P M. This line T W represents the side seam, and it is to be drawn as described, according to taste, and as to the direction and curvature such seam may be desired to have, and it meets line G L at a point, D². At side seam, T W, toward working-line O O, on horizontal line E K, excess in length of such line over length of line N P is marked, giving point X; and on horizontal line G L one-third of the excess in length of such line is marked over the waist-measure from vertical edge of side band to center vertical line of back, giving point Y; and on same line G L, at point Z, is marked off toward working-line O O two-thirds of the remainder of such excess in length, in part marked off and represented at point Y, which gives point A², and at point B² is marked the balance or remaining part of said excess, giving point C². These points D², Z, and B² are determined by the taste and skill of the draftsman, and through the points Z and B² and the points Y, A², and C² gradually sloping and curving lines are drawn from points X, B², and F² of horizontal line E K to horizontal line H M. The sloping line X Y meets the horizontal line through point T at G², and the side seam, T W, at point W. Each pair E² Z, and E² A², and F² B², and F² C² of sloping lines meets at a common point at the lines E K and H M, and between the lines G L and H M the sloping lines in each pair swell or bend toward each other to accommodate the garment to the enlargement at the hip.

The pattern so far marked out pertains to and embraces one-half of the back of the person, and as to the back, except as to marking out the shoulder and arm-size and cutting and removing the material embraced within each pair of sloping lines, it is substantially completed.

The remainder of the plotting or drafting pertains to and embraces one-half of the front of the person, and the drafting is proceeded with as follows: On working-line O O, from point N toward point E, is marked one-third of the distance between N E, and to the left of such line a straight line is drawn at right angles thereto, and from pivot-point J is marked on the line the measure from the center point, *a*, to the neck at center vertical line of neck at front, giving point H², and through this point H² and point F a straight line is drawn and continuing it any distance, extending the line E K so as to meet it, giving point J². On line H² F extended, and from point J², length of waist is marked off downward, which is distance between points E and G on

working-line O O, giving point K², and between this point K² and point G a straight line is drawn, which is line of waist at front of person, and on line H² F, extended from point K² downward, is marked the distance between points G H on working-line O O, giving point L², and a straight line is drawn from such point to point H, which line is line of waist at front of person over largest part of hip. One-half of the length of line E J² is marked, and through this part a straight line is drawn upward at right angles thereto, and on this line is marked the intersection with it, which is point M² from pivot-point J, corresponding to the measure between the center pin, *a*, over the shoulder to the neck-bone at center vertical line of neck on back, and line through point M² from such point is reduced in length equal to the width of neck on back, (shown between points U and P,) giving point N², and from this point is drawn a gradually-curving line to point H², convex toward line through point M², for the neck from the center front line to the neck-seam at back, which neck-line, when the pattern is placed upon the person, meets at its point N²—point U of the back—and lies along in a continuation of line U P. The distance is taken off between point K and point A⁴ of intersection of lines S T and line through point Q, and to such length is added the measurement from center pin, *a*, over shoulder and back to upper edge of back band at the center vertical line of back, and with this continued length as a radius, the pivot-point J as a center, an arc of a circle is described for a short distance at right of working-line O O, and from point N² of line M² the measure between points U V is laid off, and its point O² of intersection with said arc is marked. From point O² to point G² a line is drawn in the shape and curve for the shoulder-opening, running the same downward and about one-half an inch to the length of the working-line O O through the angle-point E and horizontally about one-half an inch below the line E K, and thence up to point G². On line H² F, from point N², the distance between point M² and pivotal point J is marked, giving point P², and through this point and point K a straight line is drawn, which represents height of bias seams. On bias-line P² K, from point P² toward working-line O O, is marked one-third of length of line between point P² and working-line, giving point Q², and on waist-line K² G, from point K² toward point G, is marked off the same length, giving point R². On bias-line P² K, from point Q² toward working-line O O, one-fourth of whole length of line from P² to working-line is marked, which gives point S². On line K² G, at each side of point R², one-half the excess of length of such line over waist-measure is marked, dividing such excess equally upon each side of such point R², giving points T² T², and then three-fourths of an inch, or thereabout, from the point T², at right hand, the remainder of the excess in length of

waist-line $K^2 G$ over waist-measure is marked off, and having divided this so marked off portion into two parts, a straight line is drawn through such point U^2 of division and point S^2 on bias-line, and such line is continued in a direction to intersect hip-measure line $L^2 H$ at V^2 . The excess of length of hip-line $L^2 H$ over waist-measure about largest part of hip at the front, or over the hip-measure, is divided into two parts, and each of such parts equally divided and marked off at each side of points W^2 and V^2 on hip-line $L^2 H$. Curving lines are drawn through the several points established as above at bias, waist, and hip lines in substantially the directions shown in the drawings, and between the waist and hip lines the lines of each pair of lines are given a swell toward each other to accommodate the enlargement of waist above hip.

The portions of pattern inclosed within the curving and sloping lines described, and shown on the front and back parts of the pattern and in the drawings as not marked off in angular running parallel lines, are cut out, which, with cutting the pattern in the outline shown, completes the plotting and drafting of and makes the pattern ready for use.

The measurer herein described can be readily and compactly folded, taken apart, and put together at pleasure, and, provided its bands are suitably graduated upon opposite sides, a then simple reversal of the band enables it to be worked from the right as well as the left shoulder—obviously of especial advantage when measuring a deformed person.

The bands may be rigidly attached together in the position described, and the curvature in the front band is to bring the upper edge of such band directly in line with the horizontal line at the center of the bust or chest of the person.

The center pin or pivot, a , of the measurer, and from which measures are made, and then from a fixed point which corresponds thereto in relation to the direction of the graduated edges of the bands such measures are drafted or plotted, may be, so far as the measuring is concerned, placed at the angle o of intersection of the bands $A B$ at a point other than that described; but a point just outside of such angle is most convenient for obvious reasons.

The system of measuring and plotting and the character of the measurer herein described

are distinguished from all others, in that substantially all measures are made from a given and established line at one side of the person to the center vertical line of the person's body at the front and back and from given horizontal lines about the body, whereas in all others the measures are taken off or made around the whole circumference of the body, and are not made from any given and established vertical and horizontal lines; and it is this distinguishing feature which makes the measuring and plotting substantially and practically geometrical, and one based on measurements in inches.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A measure for garments, composed of flexible bands A , B , and C , attached together by a common center pin, a , one, B , of such bands having its working or measuring edge at and along a horizontal line below the horizontal line of the working or measuring edge of the band C , substantially as and for the purpose described.

2. A measure for garments, composed of flexible bands A , B , and C , attached together by a common center pin, a , one, B , of such bands having a downward bend or curve, n , all substantially as and for the purpose described.

3. A measure for garments, composed of flexible bands A , B , and C , each graduated in its length, and attached together by a common center pin, a , one of such bands having a downward bend or curve, n , all substantially as and for the purpose described.

4. The flexible graduated bands $A B$, center pin, a , plumbing-point f , and raised edge b on band A , all substantially as and for the purpose described.

5. The flexible graduated bands $A C$, center pin, a , plumbing-point f , and raised edge b on band A , all substantially as and for the purpose described.

6. The flexible graduated bands $A B C$, center pin, a , plumbing-point f , and raised edge b on band A , all substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM GANZHORN.

Witnesses:

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WM. S. BELLOWES.