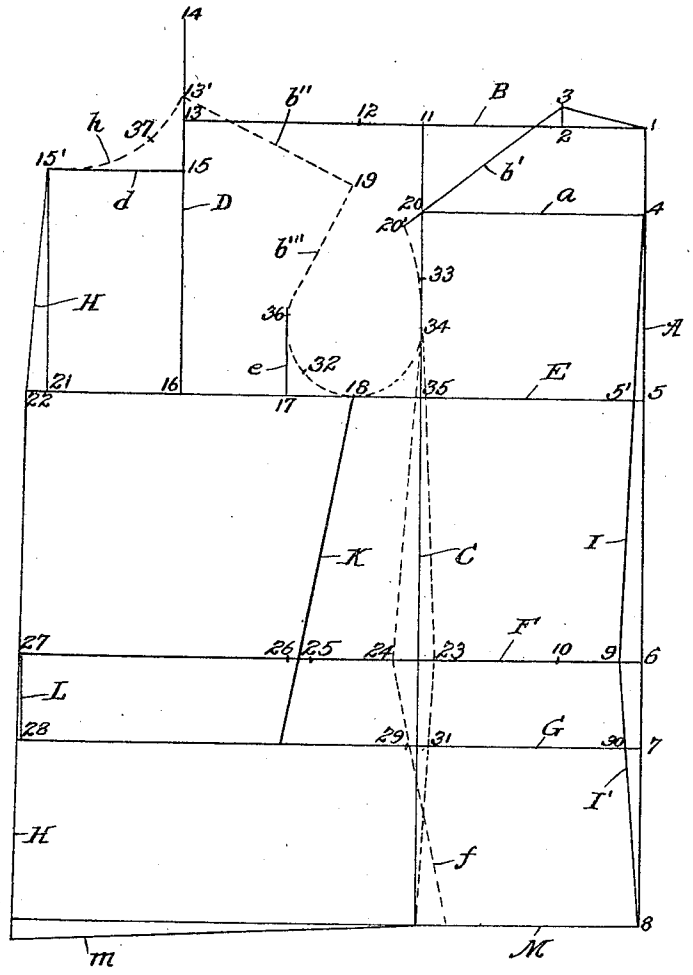
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METHOD OF LAYING OUT PATTERNS.

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## METHOD OF LAYING OUT PATTERNS.

No. 927,845. Specification of Letters Patent. Patented July 13, 1909.

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*To all whom it may concern:*

Be it known that I, VINCENZO EVANGELISTA, a subject of the King of Italy, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Laying Out Patterns, of which the following is a specification.

My invention relates to systems of plotting out patterns, laying off the lines on which the cloth of a garment is to be cut, and locating points which said lines shall intersect, and it consists in the method of finding and plotting these points and lines which is hereafter described and specifically stated in the claim appended, the object of my invention being to provide a system of plotting the measurements taken by tailors or dress-makers which is simpler, more accurate and easier of application than any heretofore known to me.

A further object is to provide a method which allows the exact amount of suppression at the proper points to be easily ascertained and allowed for in the cutting of the garment.

In the accompanying drawing I have shown a diagram pattern of one side of a man's coat.

In carrying out my method, I first take measurements from the body of the person for whom the garment is intended, and these measurements form the factors on which the subsequent plotting of the pattern is based. These measurements are: the determined length of the coat or other article, length from neck band to a point beneath the armpit, length from neck band to waist, length from neck band to hips. These are the vertical measurements. The horizontal measurements are: around the body under arm (breast measure), around the waist and around the hips.

In addition to the measurements above given, I accurately measure what I term back suppression, which consists in taking a measurement of the body from the front line at the lower edge of the scye to a point in the middle of the back at the waist, and by putting this measurement on the pattern hereinafter described, an accurate measurement can be had of the amount of material that must be taken in to make the garment exactly fit the wearer.

Referring now to the drawing, the first line drawn for the beginning of the pattern is the "base" line extended vertically at the extreme right, from the point 1 to the point 8, said line being lettered A. This is in length equal to the determined length of the coat from the neck band to the edge of the skirt and may be called the back seam line. Taking the distance between the neck band and the armpit and applying it to the line A from the point 1, I locate the point 5 and at this point draw the line E at right angles to the line A. This line will touch the lowest part of the curve of the armhole at 18 as will be later seen. This distance is usually termed the depth of scye. Taking the measurement from the neck line, the point 1 down to the natural waist of the person fitted and applying this measurement to the line A from the point 1, I locate the point 6 from which a line is drawn at right angles to the base line A. This may be termed the natural waist line and is lettered F. Taking the measurement from the neck band to the hip, I apply it to the line A from the point 1 getting the point 7 and as before I draw a line G at right angles to the line A. This is termed the hip line. A line B is now drawn from the point 1 at right angles to the line A and taking one-half the width of the back, I apply it to the top line B from the point 1 and get the point 11, from which I draw the downwardly extending line C which marks approximately the line of junction between the side and back of the coat. Starting again from the point 1, I lay out a distance on line B equal to one-fourth of the breast measure (one-fourth of the measure entirely around the body) and thereby locate the point 12 and lay out a distance on line B from the point 12, equal to one-third of the breast measure locating the point 2. I then lay out on line B a distance from the point 12 equal to one-third of the breast measure which locates the point 13. From the point 13 a line D is extended downward at right angles to the line B until it intersects the line E primarily drawn as described from the point 5. At the intersection of the lines D and E a point 16 is located. At one-fifth of the distance from the point 16 to point 5, on the line E, I locate the point 17.

At the intersection of line C with line E, I mark the point 35. I measure upward on line C from the point 35 a distance equal to the distance from the point of shoulder to the armpit plus one inch which locates the point 20 on the line C. I now connect the point 20 with the point 16 by an imaginary

line not plotted nor shown in the diagram, but merely temporarily made as by the edge of a ruler, and from the point 17 I erect a vertical *e*. At the intersection of the vertical *e* with the imaginary line connecting 20 to 16, I mark the point 36, which gives me the point of spring for the scye or semi-circular edge of the armhole which is shown in dotted lines. From the point 16, I extend the line D upward above its intersection with the line B sufficiently so that the total length of the line from 16 to 14 (14 being the extremity of the line D) shall be equal to the distance between the point 17 and the point 5. The line D from 14 to 16 I term the "primary measure, or first measure" in terms of which the distances now to be stated are calculated. Thus the distance from 13 to 13′ (which indicates the upper end of the shoulder seam) on line D, is one-sixteenth of the primary measure 14—16, and the distance from the point 2 on line B to the point 3 vertically above the point 2 is the same. From the point 1, I draw a line to the point 3 and from the point 3 to the point 20. This indicates the shoulder seam. Line *b*′ is extended beyond the point 20 a distance equal to the distance from 2 to 3, to mark the extremity of shoulder seam.

From the point 35 previously located I measure upward on line C a distance equal to the radius of the curve of the armhole or scye and locate point 34, and from the point 20 I measure downward a distance equal to the radius of said curve and locate the point 33 which indicates the point from which the armhole is to be cut. In order to get the front line of the shoulder seam I draw an imaginary line from 13′ to 20 and starting from the point 13′ I measure off on this imaginary line a distance equal to the distance from 3 to 20. This line I have lettered *b*″, this locates the point 19, which is connected to the point 36 by the dotted line *b*‴, point 36 being found by erecting a vertical from 17. From the point 5 I measure on line E a distance equal to one-half of the full "around the body" breast measure and so locate the point 21, and from the point 21 I continue the line E a distance equal to one-fourth of the total back suppression and locate the point 22.

As above explained I take a measurement of the customer's body, from the front at the lower line of the scye corresponding to the point 17 on the pattern and measure from this point to the center of the back at the waist. The point of the waist at the middle of the back, after the back suppression has been compensated for in the pattern is indicated by the point 9. I take a straight edge with this measurement on it and place one end of the edge on the point 17 of the pattern, and then manipulate the straight edge until the other end of the dimension comes upon line F, and thus locate the point 10, and the distance from this point 10 to the point 6 on line A, which corresponds to the center of the back is the actual amount of suppression, which must be had in one-half of the garment, and in the description following in which I refer to fractions of the back suppression, it is to be understood that these measurements apply to one-half of the pattern. On line D I measure from point 13′ a distance downward on the line D equal to one-fourth of the line and locate the point 15, and from this point I draw a line at right angles to the line D as indicated at *d*. From the point 21 I draw a line upward at right angles to line E until it intersects with a line *d* extending at right angles to D from point 15, which is directly opposite point 19. A line also is extended upward from point 22 to the intersection of *d* with the line from 21, thus giving a line H which, continued downward forms the front edge of the coat. In order to locate the point 5′, a distance equal to one-half of the full breast measure is taken from a point 22 on line E. The distance between the points 5 and 5′ is equal to one-quarter of the total "suppression" necessary to form the inward curve of the back. In order now to give a guide point for the curve of the neck band (shown by dotted line *h*) I measure out from the point 15 a distance equal to one-eighth of the "primary measurement", line D and mark the point 37 half-way between lines D and *d*. The points 13′ and 15′ are now connected by an inwardly curved line. The degree of curvature of this line is a matter of judgment or taste. I have now plotted and laid down guide lines for the upper portion of the coat including the armholes, shoulders, neck band and breast, and laid down approximately lines for the back, front and seam between the front and back. The marks and lines indicating the full back suppression and skirt flare must now be plotted.

Measuring inward on line F from point 27 located at the intersection of line F with line H, a distance equal to one-half of the full waist measure I locate the point 9. The distance from this point 9 to the line 6 is one-quarter of the total back suppression. Now from the point 6 on line A, I measure inward a distance equal to four times the distance between 6 and 9 which gives the point 10, 10 to 6 equaling the total back suppression. The point 20 is now to be connected to the line A by a line *a* at right angles to line A which gives a line on the back from the point of one shoulder to the point of the other. At its intersection with line A, I mark the point 4 and then connect the point 4 with the point 9 by a line I. This point 9 is connected to the point 8 (the lowest extremity of line A) by a line I′. The lines I, I′ give the line of the middle seam of the back. In

order now to locate the side seam of the back, I locate the point 23. This point is found by measuring from the point 10 on line F a distance equal to twice the distance between 9 and 10. This point 23 so found indicates the side edge of the back. From the point 23 a distance is measured on line F equal to one-half of the total suppression (or distance between 10 and 6), and the point 24 located. This indicates the rear edge of the side at the waist line as shown by the dotted lines. I now measure from the point 24 a distance equal to the full suppression (points 10 to 6) and locate the point 25, and from point 25 I measure a distance equal to one-quarter of the suppression and locate the point 26. From the point 18 previously found and which marks the lowest point of the armhole, I now draw a line downward which intersects the line F half-way between 25 and 26 and which extends downward to the hip line G. This line K indicates approximately the line of the side seam, the edges of the cloth however being cut away on either side of the line K to the point 25, 26. This gives the suppression around the waist.

L designates a line drawn at right angles to line F from the point 27 which locates a point 28 on line G. Measuring from this point 28 along line G a distance equal to the full hip measure gives the point 30 at the intersection of line I'. Drawing now the dotted line from point 23 on line F to the intersection of line M with line C, the point 31 is located at the intersection of said dotted line with line G. Taking one-fourth of the "suppression" and applying it from point 31 gives the point 29 which marks the intersection of a diagonal line *f* extending downward from the point 24 on the waist line F. This diagonal dotted line *f* is extended downward until it intersects with the line M marking the extreme bottom of the coat. This line *f* marks the rear edge of the side of the coat and gives approximately the outline of the back. In order to give a proper drop to the front edge of the coat the line H is extended below line M a distance equal to one-fourth of the back suppression and then connected to the point of intersection of line C with M by a line *m* which gives the lower edge of the coat.

It will be seen from the description above given that a general feature of my system of garment plotting consists in forming a rectangular figure or a series of connected rectangular figures, one for each breadth of the garment, dividing said rectangles by transverse lines whose intervals correspond to the lines defining the general divisions of the human form, and then laying down points upon such lines at distances corresponding to certain definite fractions of the general lines and the distances between them. It will also be seen that by so subdividing the rectangular figures into smaller spaces by transverse lines, it is comparatively easy to locate the points on which the lines defining the final cutting lines are to intersect. All the lines needed to accurately define the outline of a garment are provided by my system. It is not merely the general outlines which are laid down and which later have to be filled in by guess work, but when my diagram is finally completed there is nothing lacking. It is also to be noted that by providing a specimen diagram such as the diagrams shown in the drawing and providing data indicating what measurements are to be applied between the points and lines and how the points are to be located, that a complete scheme of garment cutting is provided whereby any one having the sample diagram can take their own measurements and applying the rules laid down in this specification or the data based on these rules can plot out a complete pattern for a garment without recourse to scales on the one hand, or guess work on the other.

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

The herein described method for obtaining patterns for coats consisting in first measuring the body of the customer to determine the length of coat, length from neckband to point beneath the armpit, length from neckband to waist, length from neckband to hips, breast measure which is around the breast under the arm, waist measure, hip measure and a measure for back suppression which is taken from the front point of the scye at the lower edge thereof to the middle of the back at the waist, then laying out these several measurements on a pattern and marking on the pattern the exact amount of back suppression substantially as and for the purpose set forth.

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

VINCENZO EVANGELISTA.

Witnesses:
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REO P. WRIGHT.