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TAILOR'S  
SCIENTIFIC GUIDE

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THE

T A I L O R ' S  
S C I E N T I F I C G U I D E :

BEING A

MATHEMATICAL PRINCIPLE

FOR

BALANCING, DRAFTING, AND CUTTING

PANTALOONS.

~~~~~  
BY A. S. DE LANY.  
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## INTRODUCTION TO THE TRADE.

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GENTLEMEN :—Permit me to present to you for examination a Mathematical System for Balancing, Drafting, and Cutting Pantaloons, arranged from different measures, and represented by different diagrams, giving, for the different shapes and sizes, a correct position to the top, which is the BALANCE; the divisions being so arranged upon a square, that they may be cut in any style that fashion or taste may require, leaving the same BALANCE.

To this I might append, that with the encouragement I have already received, having disposed of the First Edition of this work, together with the many certificates of its correctness from the Trade,\* I now offer this my Second Edition; and in presenting it, being fully assured of its correctness, I think an explanation of the different drafts will be sufficient to convince any one that the principle laid down is correct, it being purely mathematical.

Respectfully,

THE AUTHOR.

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\* These testimonials will be shown when required.

## RULES

FOR USING THE

# TAILOR'S SCIENTIFIC GUIDE.

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### EXPLANATION FOR MEASURING.

FIRST measure the outside length from the height to the sole of boot, say 41 inches; then the length of the leg seam to the same, say 31 inches; this measure should be taken with great care, and for spring-bottom pants without straps  $\frac{1}{2}$  inch added to the length; then the waist measure, say 29 inches; then the belly measure, taken halfway between the waist and hips, say 34 inches; then the hip measure, taken around the most prominent part, say 36 inches; then the thigh measure, taken on the dress side up to the thigh joint, say 24 inches, (this measure should also be taken with care,) which will on proportional forms be two-thirds of the hip measure; a proportionable sized leg for the measure laid down would be about 20 inches at the knee, 16 or 17 at the ankle, and about 20 at the bottom; although they can be cut any size required; for a large man note the distance to the knee, and for strap pantaloons measure the instep and heel.

### EXPLANATION OF THE SQUARE.

On the square is a division of the waist, hip and thigh measures; No. 6 on the long arm is of the waist, and Nos. 1, 2 and 3, marked hip at the end, are of the hip, and No. 8 on the short arm; also Nos. 1, 2 and 3, on the long arm, marked at the end thigh, are of the thigh; and Nos 4, 5 and 7 on the short arm; the divisions all being numbered they are to be used as directed in the explanation of the different drafts; the divisions all work from the size to the end at the elbow with the exception of division No. 8 on the short arm, which works from the size to the other end.



Plate N° 2.

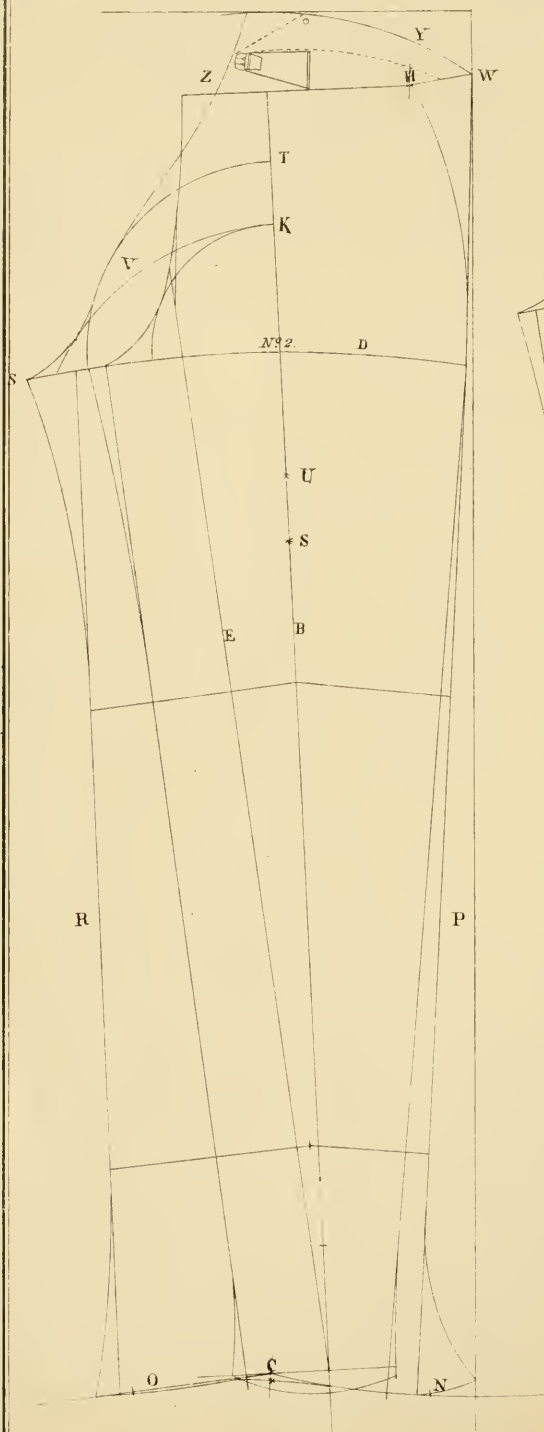
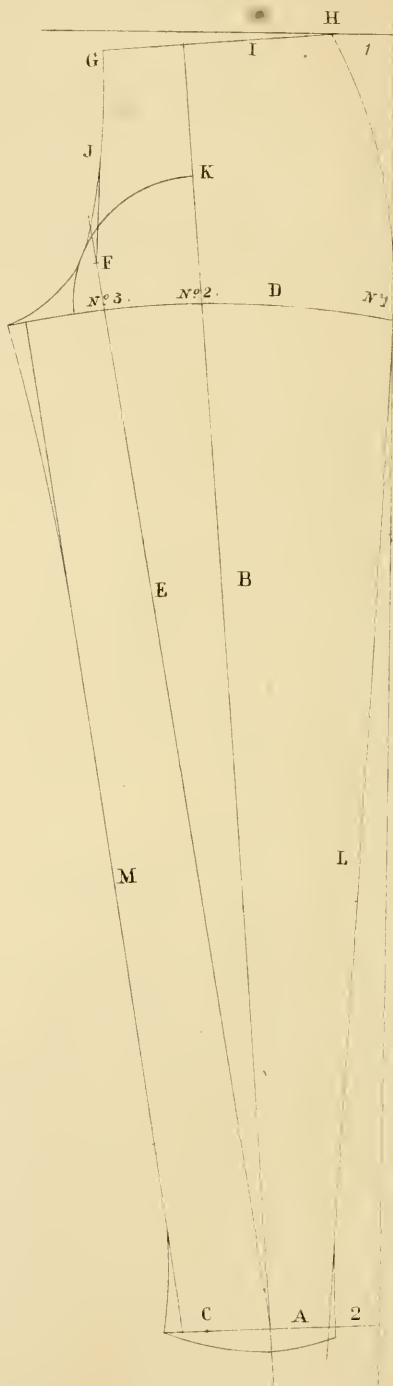


Plate N° 1.



## PLATE FIRST.

## EXPLANATION FOR DRAFTING THE FOREPART.

FIRST, square the top of the cloth by the edge as represented by the diagram, and note the full length from 1 to 2; then square line A, at the bottom from the edge, by letting the square at the elbow touch the edge, and at the top of the long arm lay in about  $1\frac{1}{2}$  inch, which is to get it on a square with line B; then before moving the square go in on line A, any distance required to get the seam on the bias, say  $1\frac{1}{2}$  inch; then turn the square over and get the width of the forepart, by using the inches on the short arm, say 6 inches; and before moving it establish the top of the foot, (or line B which represents the same,) as far from the outside seam as you wish the seam to come from the top of the foot, say  $2\frac{1}{2}$  inches; then place the size of the thigh in division No. 7, on the short arm on line B, and mark at the end; this gets the centre of the heel represented by letter C, or the star; then from the centre of the heel sweep by the length of the leg seam which gets sweep D; then place the long arm of the square on the sweep, placing the size in division No. 1 of the thigh or hip, the one you are drafting by at the edge of the cloth, and mark at the size in divisions No. 2, 3, and at the end; then from the top of the foot to No. 2 on sweep D, draw line B, continuing it to the top, and from the same to No. 3, draw line E; then from sweep D, go up on line E to F, by the size of the thigh in division No. 4, on the short arm, and make a mark; then from sweep D, go up on line B to K, by the size of the thigh in division No. 5, on the short arm marked dia. of T; then at the waist go out from line B to G, by the size of the waist in division No. 6, on the long arm, placing the size on line B, and mark at the end; then turn the square over, and by using the inches on the square get the distance from G to H, by  $\frac{1}{4}$  of the waist measure; then turn it back and square line I, from G to H, by line B, which makes the top square; then from F to G, draw line J; then from K, make a sweep and finish line J, touching the sweep as per diagram; then from halfway between F and G, on line J, measure across  $\frac{1}{4}$  of the belly measure, and finish from H to the hip, touching the size as per diagram; then from the outside seam at the bottom go in  $\frac{1}{2}$  inch for the spring, and from the inside seam go in  $\frac{3}{4}$  of an inch; then from the bottom to sweep D at the hip, draw line L, and to  $\frac{1}{2}$  inch inside of the point at the crotch, draw line M; then go down on line B, at the bottom from line A 1 inch, and on line L  $\frac{1}{2}$  inch; then put the spring on the seams, and finish the bottom as represented by the diagram, also at the crotch touching line M, down about nine inches.

## PLATE SECOND.

## EXPLANATION FOR DRAFTING THE UNDER SIDE.

FIRST, find the centre of the heel on the backpart, by measuring on the forepart at the bottom, from line B, to the outside seam; then place the distance at the edge of the cloth, and measure in one half the size of the bottom, and make a mark; then place the centre of the heel on the forepart represented by letter C on the mark; then at the waist at W, go in  $\frac{1}{2}$  of the difference between the waist and hip measures, make a mark and place point H of the forepart on the mark, as represented by the diagram; then from the centre of the heel, sweep line N by the length up to sweep D at the hip, and from the same, square line O by line E; then get the width of the backpart, by the size of the bottom; first measure on the forepart at the bottom, from line B to the outside seam; then place the distance at the centre of the heel, and measure out on line N half the size; then from the same to the inside seam, place the distance at the heel, and measure out on line O, the same; now by the size of the ankle get the spring on the backpart; first go up on line B from line A, about 6 inches, and make a mark; then from the same measure to the outside seam, place the distance at the centre of the heel, and measure out on line N, half the size; then from the same to the inside seam, place the distance at the heel, and measure out on line O the same; now for this reason, you have these two points to move; as the foot turns out, it turns the calf of the leg in, which produces size on the inside and a hollow on the outside, and will, if not moved twist the bottoms; to move them as represented by the diagram, first move the outside point in  $\frac{1}{2}$  or  $\frac{3}{4}$  of an inch, and the inside one out the same; then from the bottom to the hip, draw line P, and to  $\frac{1}{2}$  inch outside of the point at the crotch, draw line R; then on the same lines, go up from lines N and O about 6 inches for the spring; then finish the bottom as per diagram; then continue sweep D from the point at the crotch, and go out on the same to S, by the size of the hip, in division No. 8 on the short arm, placing the size at the point and mark at the end; then go down on line R about nine inches and finish the inside seam; then from sweep D, go up on line B to T, by the size of the hip in division No. 2 on the long arm, marked dia. of H, and cast a sweep; then from the same, go down on line B to U, by the size of the thigh, in division No. 5 on the short arm, marked dia. of T and from K by the length to U, cast sweep V; then from H at the waist, square to W by line E, and from the same, go out to W by  $\frac{1}{4}$  of the dif-

ference between the waist and hip measures; then from W to the hip, finish as per diagram; then from the same, cast sweep Y by the length to No. 2 on sweep D; then get the size of the waist and belly measures, and finish line Z, touching the sizes and sweeps as per diagram; then to find the correct place for the strap, go down from sweep D, on line B to S, by the size of the hip, in division No. 2 on the long arm, and from half-way between H and W, which is the size when made up; cast a sweep by the length to S, as represented by the dotted line, and put the strap under the sweep; then finish the top as required, to suit with or without waistbands; then before moving the forepart, notch the seams; first make a mark at half the size of the forepart, and from the same, square across by lines L and M, as represented by the diagram; then for the undress side, take off from the forepart as represented by the dotted lines on plate No. 3; then when making up the bottom, stretch the seams of the forepart  $\frac{1}{2}$  or  $\frac{3}{4}$  of an inch, and shrink them in on line B.

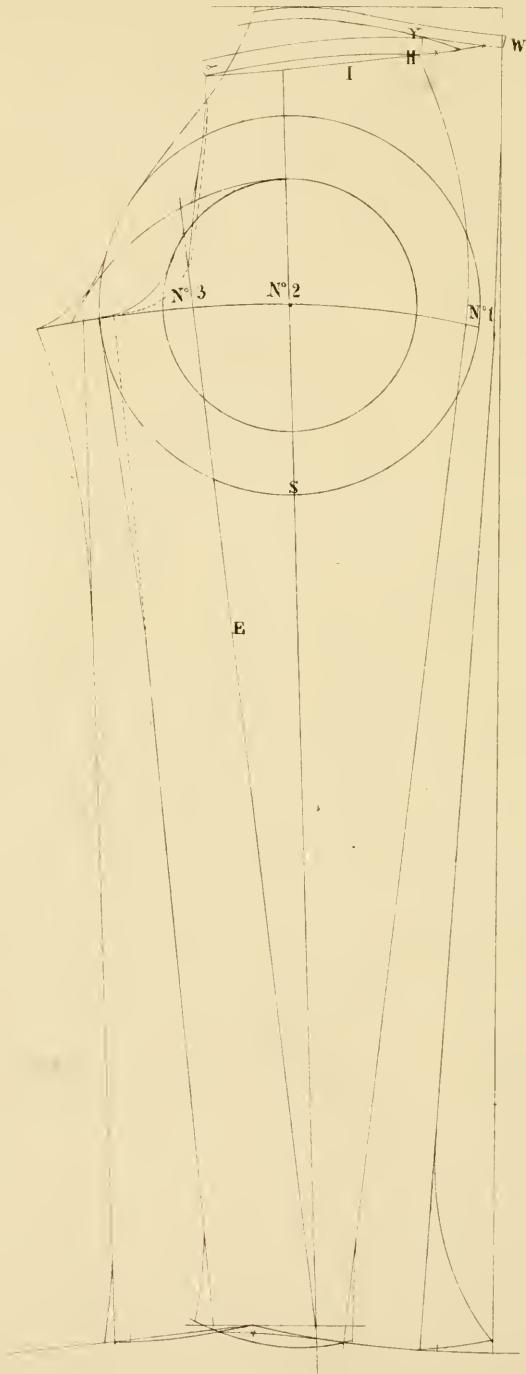
EXPLANATION TO DRAFT BY THE HIP AND THIGH  
MEASURES.

To draft by the hip and thigh measures, where the thigh measure (taken as directed) equals two-thirds of the hip measure, (the same as 36 hip and 24 thigh.) It is a proportional size, and both the forepart and backpart are cut by the same sizes; but if the thigh measure does not equal two-thirds of the hip measure, (the same as 36 hip and 23 thigh,) then it is not a proportional size, and the backpart is cut by a different size. First draft the forepart by the thigh measure, establishing all of the points on the forepart (with the exception of the waist) by the thigh measure; then to get the size to draft the backpart by, first take the difference between the size that the thigh measures and the size it ought to measure to be in proportion to the hip, then add one-half of the same to itself, and the size it produces add to the hip measure and draft the backpart by it; to make the explanation plain, I will get the size to draft the backpart by from the measure laid down. First take the difference between the size that the thigh measures and the size it ought to measure to be in proportion to the hip, (which is 1 inch;) then add one-half of the same to itself (which is  $\frac{1}{2}$  inch) and it produces  $1\frac{1}{2}$  inch; then add the  $1\frac{1}{2}$  inch to 36, the size that the hip measures, and it makes  $37\frac{1}{2}$ , the size to draft the backpart by; then to draft the backpart, first find the centre of the heel; then go in at the waist at  $W\frac{1}{4}$  of the difference between the waist and  $37\frac{1}{2}$  (the size you are drafting by,) and place the forepart on the same as in plate No. 2; then place the size  $37\frac{1}{2}$  in division No. 2 on the long arm on line B, where it crosses sweep D, and mark at  $37\frac{1}{2}$  in division No. 1 for the outside of the backpart; then at the end and from the same go out to S by the size in division No. 8 on the short arm; then to get the distance from sweep D to T, go up by (the size  $37\frac{1}{2}$ ) in division No. 2, and make the sweep; also to get sweep V go up by the thigh measure that equals  $37\frac{1}{2}$ ; then finish the draft the same as plate No. 2.





Plate N° 3.



## PLATE THIRD.

THESE are drafted to wear without suspenders; they are drafted the same as plate No. 2, with the exception of a few variations at the top and outside seam, which will require a few explanations; first, to draft the forepart as per diagram, commence the same as in plate No. 1, and establish line B, as near the outside seam as you wish the seam to come from the top of the foot, say  $1\frac{3}{4}$  inch; then get the centre of the heel, and sweep D, and when you place the square on the sweep, place two sizes less (in division No. 1) than the size you are drafting by, at the edge of the cloth, and mark at the full size in divisions No. 2, 3, and at the end; then at the top, square line I by line E, which drops them  $\frac{3}{4}$  of an inch at the front of waist; then take off at point H, the same as at the hip; this gives a narrow forepart, which I would recommend in almost all pantaloons, as it gives to them a much better style than the wide forepart; then to draft the backpart, first find the centre of the heel and place the forepart on the same; then go in at the waist at W, twice the distance that you took off from the forepart at H; then  $\frac{1}{4}$  of the difference between the waist and hip measures, make a mark, and place point H of the forepart on the mark, or go in once the distance; then the fourth; then the distance again, as represented by the diagram; then from sweep D, go down on line B to S, by the size of the hip in division No. 2 on the long arm, marked dia. of H; then from halfway between H and W, cast sweep Y by the length to S; then get the size of the waist and belly measures, and finish the tops, also the bottoms as per diagram; then notch them as represented in plate No. 2, and take off from the forepart for the undress, as represented by the dotted lines; the sweeps carried round, producing the circles in this draft, are to show the circumference of the hip and thigh.

## P L A T E F O U R T H .

THESE are drafted with a different top and bottom from plates No. 2 and 3, which will require a few explanations; although drafted upon the same principle, the tops are drafted for broad falls, and, for a small waist, require a little taken off from the forepart at the hip to straighten the outside seam; but in all cases where it is taken off it must be added to the backpart. The pocket bearer is cut the same shape of the forepart at the outside seam, and carried above the same height of the backpart at the hip, also giving it the same spring, and finishing it as represented by the diagram; the tops being finished the same as in plate No. 2. The bottoms are drafted for straps, although they differ but very little from plate No. 2. To draft them as represented by the diagram, cut the forepart half the size of the instep, and hollow the outside seam a little at the ankle; then from the centre of the heel measure each way half the size, which leaves the centre in the same place for the different sizes; then from the corner of the heel get the width of the straps, letting the inside one extend to the inside seam and the outside one within 1 or  $1\frac{1}{2}$  inch of the seam. This I would recommend in almost all strap pantaloons, as it prevents a draw on the outside seam, and also makes them fit much better over the foot; although if you wish the seams to come on the side of the foot, they will come so by establishing line B in the centre of the forepart; the draft otherwise is finished the same as plate No. 2.

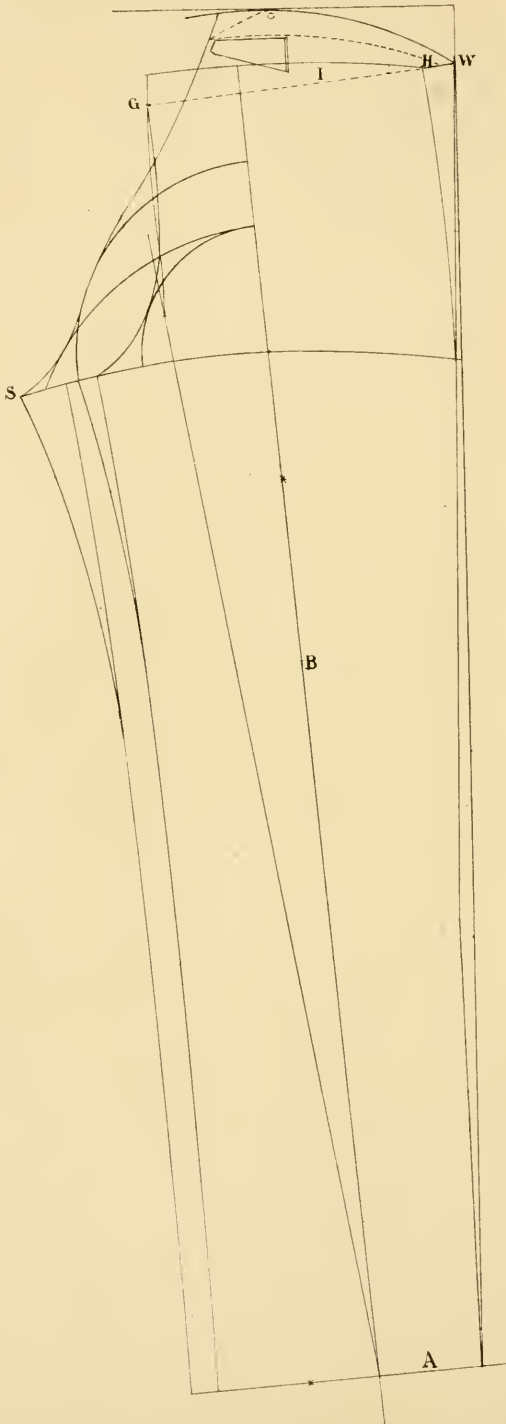
Plate N° 4.







Plate N<sup>o</sup> 5.





## P L A T E F I F T H .

THESE are drafted for the corpulent man, and with plain bottoms. To draft them as represented by the diagram, first note the length to the knee, then the full length, then square line A at the bottom and get the width of the forepart, say  $8\frac{1}{2}$  inches; then go in from the seam about 3 inches and establish the top of the foot, or line B; then from the same get the centre of the heel by the size the thigh measures, although at other places you may choose to use the thigh measure that equals the hip measure; the legs can be cut any size you may choose, but should for large pantaloons be thrown in at the knee from a straight line drawn from the bottom to the hip, from 1 to  $1\frac{1}{2}$  inch, always keeping line A at the bottom square with line B; then in all cases where you are cutting for the corpulent man, cut the forepart at the waist by the belly measure, by placing the size of the belly measure in division No. 6 on the long arm on line B, and mark at the end at G; then get the distance from G to H by one-fourth of the same measure; then from line I when squared by line B, (as represented by the dotted line,) go up at G one-fourth of the difference between the waist and the belly measures; make a mark, and from the mark to H finish the top as represented; then in drafting the backpart, first find the centre of the heel, then go in at the waist at W one-fourth of the difference between the waist and hip measures, and place the forepart on the same as in plate No. 2; then get the size of the bottom and finish the leg; then take the size of the forepart at the waist, place it at W, and measure across half the size of the waist; then apply one half the size of the belly measure and finish the top and line Z as represented by the diagram, this gives a large and correct forepart for the corpulent man, and a narrow backpart, also the correct distance on the backpart from S to W.

## GENERAL REMARKS UPON MEASURING AND DRAFTING.

FIRST, in taking the measures, they should be taken with great care, and as correct a measure got as possible, for without such you cannot expect a fitting garment of any kind or by any rule. In the first place, a few minutes' time spent in taking the measure, to get it correct, will not be lost, for it not only saves time and guesswork in drafting, but very often saves much time in the end. The drafts which are laid down, are to come just to the waist, but can be cut as high as you wish them, by noting the distance from the height to the waist, then the full length. To prevent a mistake in going down with one measure the same as the other, it would be well to carry them both to the floor; then take off from one the same as from the other, say one-fourth or one-half inch; the other measures are taken moderately tight.

In drafting, some prefer using the hip measure to get the points at the crotch, and others the thigh measure; they are both laid down on the square, and the one preferable can be used; if you choose to use the hip measure entirely for drafting, use the thigh measure that equals it, but where the hip and thigh measures do not equal each other, I would recommend them to be cut as laid down in the explanations for drafting by the hip and thigh measures. To draft pants large and full on the outside over the hips, draft from line B to the crotch point on the forepart, and to S on the backpart by the nett size; then add on the outside over the size, to make them large, as many sizes as required; for the plaited front establish the points on the forepart the same as for the plain, but by one size larger than the nett size; then put one-fourth of the size that you wish to put in for the plaits on the front at point G, and three-fourths on the outside at point H, extending gradually down to the ankle; as the fashions are always changing, it is not necessary to lay all of the different styles down in diagrams, but whatever style the fashion or taste may require, the balance and points will be got the same as already shown in the different plates.











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