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A TREATISE

ON THE

Measurement of Human Body

AND THE

Art of Cutting Materials for Gentlemen's Clothes.

Invented and improved by an experienced Merchant Tailor,

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CHICAGO, ILL.

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INTRODUCTION.

FOR SEVERAL YEARS my thoughts and endeavors have been directed to the invention of a measurement and an art of cutting, which would suitably attire every human body, according to its shape and to such perfection that every colleague would be obliged to acknowledge it to be the proper system of cutting, deriving its perfection from being in strict accordance with the laws of nature.

I had, indeed, to contend with many difficulties, but felt confident, being guided by the laws of nature as far as connected with this subject, of surmounting them and of arriving at a result of scientific investigation clearly and irrefutably to be considered as a mathematical proof.

In presenting to the public this new treatise on the art of cutting, my intention is, not to augment the number of the many manuals of this kind already existing, but to publish a system of measurement, drawing and cutting, based on the rules of Trigonometry.

The precepts of measurement of the human shape require more reflection than the old fashioned mode to which many still adhere. After having studied the following precepts of measurement of the structure of the human body, the pupil will be enabled to make a draft on paper of such measurement.

For beginners, i. e. such without practice of cutting, nothing is more dangerous than too much haste; a proceeding which would make him imagine that he had mastered all difficulties after a few days application. Those who apply superficially to the appropriation of given rules and methods, will generally find their progress unsatisfactory and the end aimed at, unattained, because the art of cutting must be studied and not merely learned.

There are many who say that the art of measuring and cutting have made progress like other arts and sciences, which are perhaps far less useful and necessary to mankind, but this I deny. Up to the present day every one has been left to his own invention in this respect; and excepting a few theoretical rules which to dish up before the novice, has been and still is the custom, the art of the practical cutter has not been confined to any certain rules whatever.

I have made it my task to lay down rules, based on plastic as well as geometry, for the guidance of the practical cutter, and which are particularly adapted for extensive business, as they enable a person to cut with ease and accuracy, according to the measurement somebody else has taken.

In order to keep clear of mistakes in cutting, I have designed at the end of this book a plan according to which all the measurements of the human body can be put into its several and separate compartments. Tafel I. Fig. 20.

I flatter myself that after an attentive perusal of this treatise the practical cutter will find it to contain many, new discovered advantages, and for the beginner it will solve all problems of this art and answer all his requirements.

THE AUTHOR.

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THE SHAPE OF THE HUMAN BODY.

The human body, i. e. upper part of it or trunk, seen from a plastical point of view, appears either as a blunted cone or as a cylinder, howsoever it may be shaped. Imagine a human figure chiseled by a sculptor, cut in two at the waist, head and arms chopped off, put in that condition on a table and the truth of this assertion will be apparent. Such a trunk can, however, assume three different shapes, namely:

FIRST, That of a blunted, erectly or obliquely standing cone, if belonging to a normally built individual, whose upper width is larger than his lower width;

SECOND, That of a blunted, erectly or obliquely standing cone, if belonging to a corpulent individual, of whom the upper width is smaller than the lower;

THIRD, That of a blunted cylinder, where upper and lower widths are equal. Another shape is not imaginable.

Were the human trunk as smooth and level as a blunted cone or cylinder, then it would be just as simple and easy to construct a covering for it, as it is to fit a cone or cylinder, the necessity of making holes for the arms being the only difference; and the material intended for the attire of the human trunk would resemble a square with circular holes cut out for the arms.

As the human trunk, however, shows an irregular surface with projecting and receding parts, it is necessary that other rules besides those that apply to cones merely, should be observed, in order to convert materials naturally even into a covering for an uneven trunk. It is therefore requisite that the operation of arching or curving should be directed by the theory of the globular zone and the vertex, for every arch forms part of one or the other, and the accurate construction of these belongs to the department of Trigonometry. We need not, however, make use of it any further than necessary or advantageous for our purpose, nor further than its application would serve to solve a question at once and in conformity with the results of long experience. But just for this very reason there arises for us out of these fragments of Trigonometry and level calculations a separate branch of this science which applies only to the human body, and which I therefore shall call

BODY MEASURING PRECEPT.

Measuring and what is to be observed in connection with it. Measuring forms the most important part of what is to be learned and must be executed with the utmost accuracy and care, because the construction of the draft entirely depends upon it. For that reason the real lengths and widths of the body must be put down in figures according to the results of these separate measurements, without respect to cut or desired shape; for these latter belong to the department of the fashion plate, whilst the construction has only the shape of the body for its object. Once knowing the dimensions of the lengths and widths of the human body and those of its limbs and members accurately, the lengths and widths of any fashion can be given with the same accuracy and certainty as if the body was to be clothed in tightly fitting garments.

It is therefore advisable to observe strictly the principles laid down in these and the following paragraphs in respect to measurement, and to take the whole measure (as given at the end) even, provided the customer should order a pair of pantaloons or a vest only. The mode of measuring part of the body is not merely productive of ignorance as to its different proportions, but necessitates to take a new measure on every occasion of a new order being given; which would prove in the end to waste more time than taking the whole measurement at once when the first order was received.

To avoid mistakes the right side ought always to be measured first, and the left side only in case of any marked difference of formation. The observance of the succession here indicated is desirable also in order not commit any error in copying out the measurement.

Though in some cases the measuring might be executed with more precision, if the person to be measured would divest himself of his coat, it might appear indelicate to ask him to do so and embarrass him; wherefore I have preferred to take the measure over the coat; which however, does not imply that the measure should not occasionally be taken without a coat and over the vest only. In this latter case proper allowance of material must be made for an outer garment when constructing the measure.

In the case of crooked or humpbacked persons, it will become absolutely necessary to measure after the coat has been taken off, in order to get thoroughly acquainted with the deformities of the body. Frequently the outer garments for the deformed are constructed, contrary to purpose and logic, and are padded to such an extent, that taking measure outside all these misplaced improvements would leave one entirely in the dark as to the real shape of the body to be fitted.

FIG 2 INCH MEASURE

FIG 3 CENTIMETER MEASURE

FIG 4 SQUARE

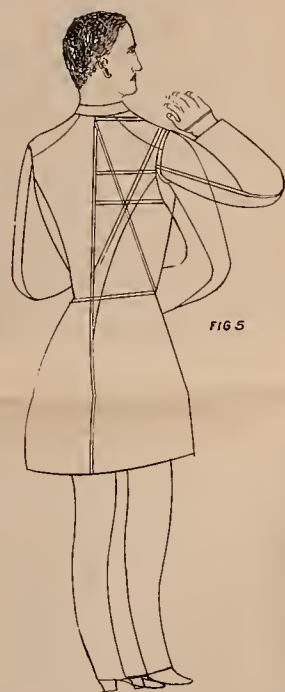


FIG 5

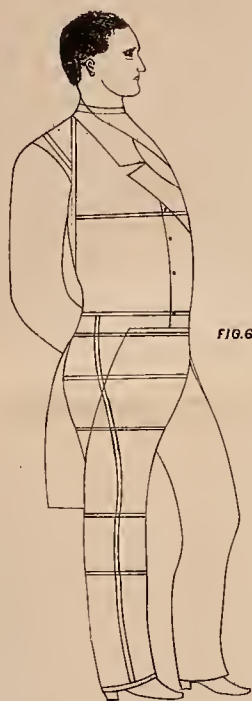


FIG 6

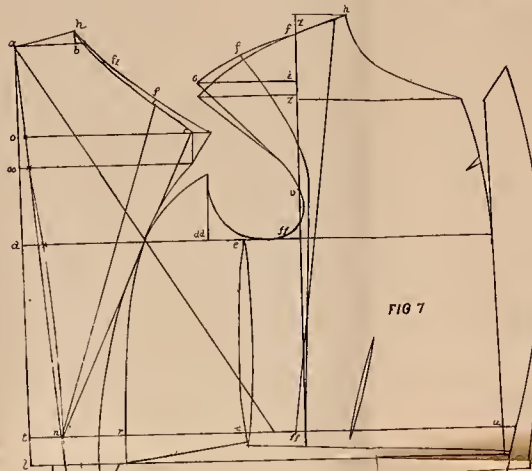


FIG 7



FIG 9

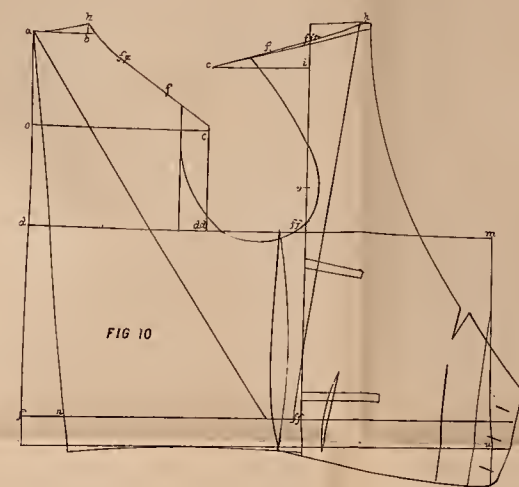


FIG 10

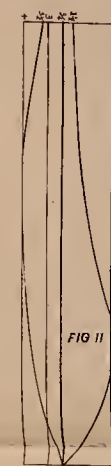


FIG 11

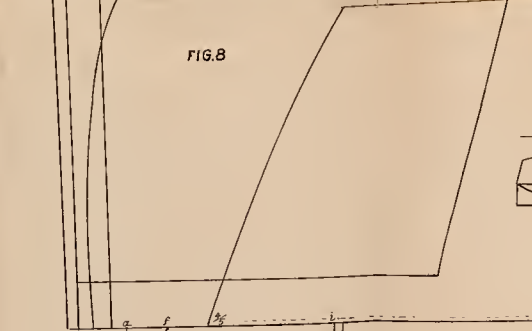


FIG 8

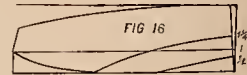


FIG 16

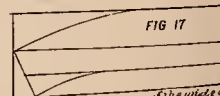


FIG 17

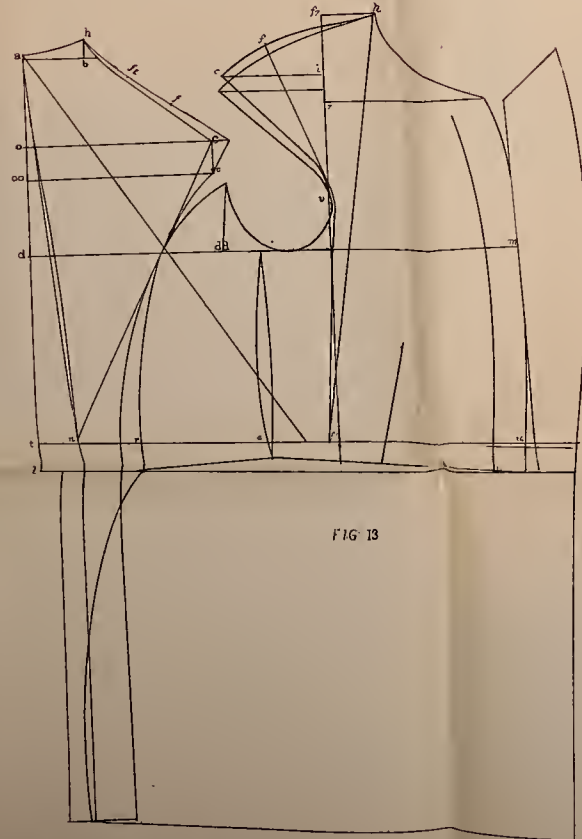


FIG 13

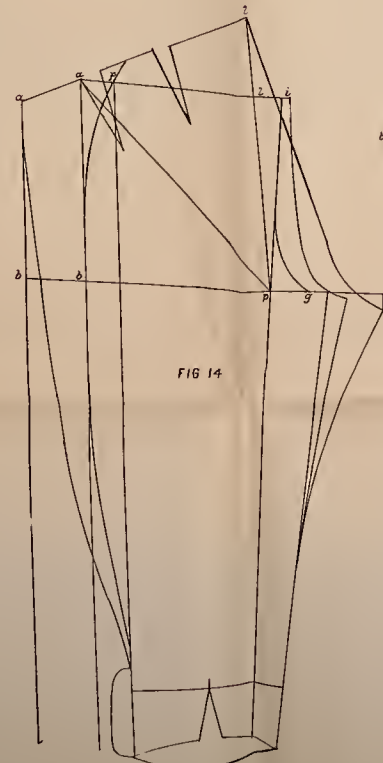


FIG 14

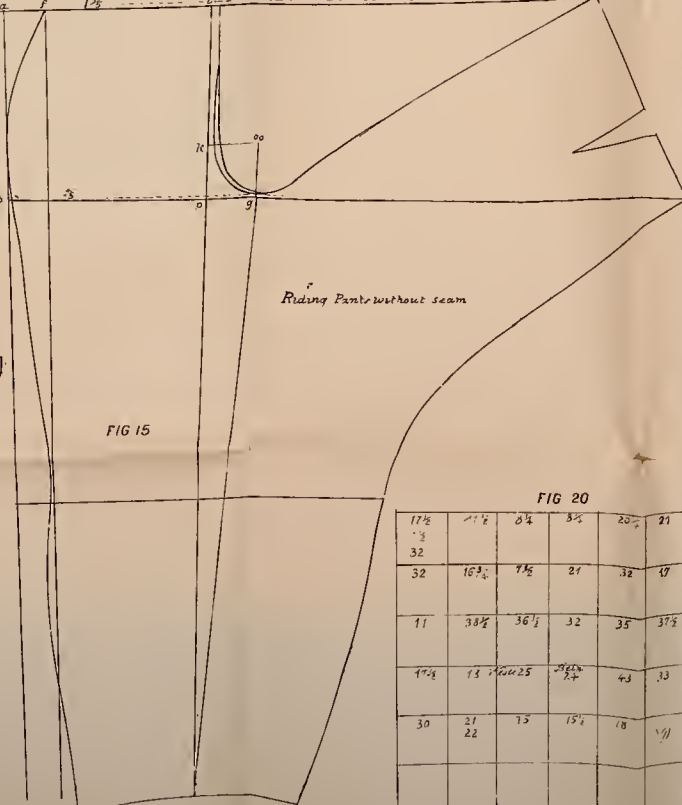


FIG 15

Riding Pants without seam

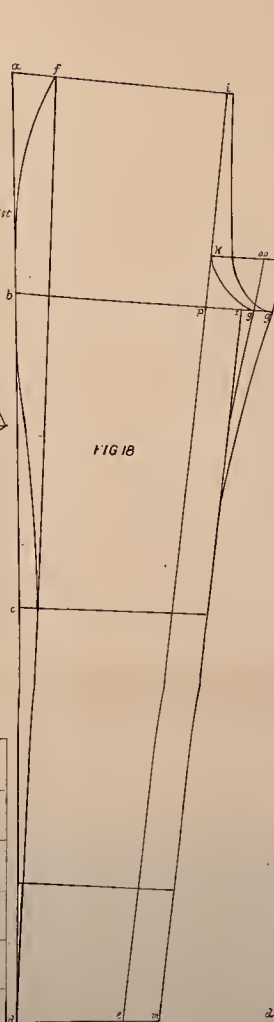


FIG 18

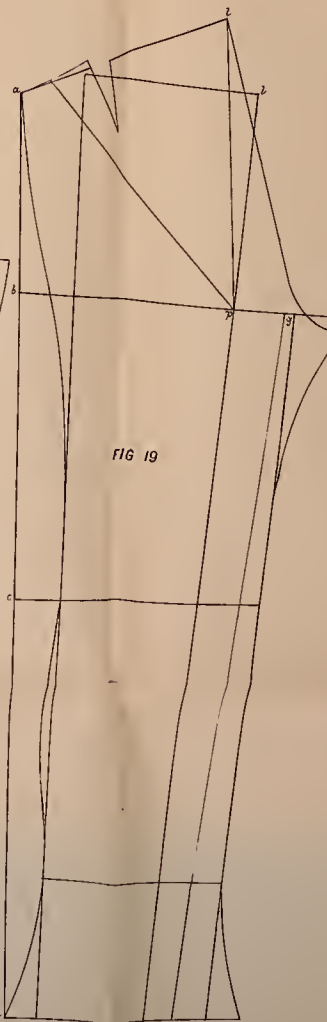


FIG 19

FIG 20

17 1/2	11 1/2	8 1/2	3 1/2	20 1/2	21
32	16 3/4	9 3/4	21	32	49
11	38 1/2	36 1/2	32	35	37 1/2
19 1/2	18	25	25 1/2	43	33
30	21	22	15 1/2	18	17 1/2

EXPLANATION OF THE EXTRA MEASUREMENTS AND THE DRAFTING OF THEM.

In order to be able to explain simply and briefly the main rules of measurements here indicated, it was necessary to omit such of them as used only in a certain few cases. These are the gaiters or coverings for the calf of the leg. These measurements are only to be taken when really needed, and put down extra in accordance with the following rules: Width of the bend of the knee (hough) measured round the thinnest part of the knee joint. Width of the calf, measured round the highest part of the calf. Width of the ankle, close above the ankle. Width of the heel, to be measured circularly round the heel of the boot and the ankle joint.

EXPLANATION OF THE PROPORTIONAL CONSTRUCTION OF THE PATTERN DRAWING.

All the drafts belonging to this treatise are executed according to the 7 times (seven times) reduced inch measure. This being understood, no difficulty can arise at the cutting. In explaining this construction, we will have to ask ourselves: the compliance with which conditions is necessary to set down the pattern draft of the bodily attire as proportional or normal? Normal denotes regularity of natural construction unchecked by disturbing influences. Proportional again is any part of a whole, which, when compared with the whole, has all the requisites of shape and size. Are these conditions united in the external construction of a human body, the latter may be called normally proportioned. A well built person as well, as a corpulent one, can possess the requirements.

By what can we reorganize, whether and when these conditions exist in the construction of a draft for the attire of the human body? Answer: When the joining is simple and harmonious to such a degree, that the whole can be put together with separate but equal parts without marring the impression of harmony, like a square that can be changed into a triangle by simply drawing a diagonal line.

CONSTRUCTION FOR THE ABNORMAL HUMAN BODY,

which has been checked in its growth, disarranged and afflicted with a hump. The designing and making up of a dress for such an individual forms undoubtedly the most difficult part of tailoring; they are, nevertheless, subjected to the same rules that apply to other parts of the body, i. e. Trigonometry, as shown in the annexed drafts. If, for the promotion of our investigation, we observe a humpbacked person closer, causing to take off his coat, we will clearly find, that we have to deal with two different halves of the body, each of which must be measured and constructed independently of the other. To cover and hide as much as in our power these deformities, must be our chief aim. This can be done by means of a judicious padding of the receding half, facilitated by the difference in the given measures of the lining and of the outside material.

CONSTRUCTION TO RIGHTLY CLOTHE THE HUMAN BODY AND TO DRAFT ACCORDING TO A GIVEN MEASUREMENT.

Before commencing to draft, I wish to observe that every cutter ought to well look at the human shape which he is about to measure, in order to ascertain, what build it belongs to. There are bodies which are broadly built and of which the back therefore is broader than it normally ought. The breadth of the back of a normally grown individual amounts always to one fifth of the whole upper width.

Noting down the measurement, the kind of build to be dealt with, i. e., whether normal breadth of back, humpbacked, rounded, or bent in back, and there will be but little difficulty to draw a correct conclusion as to the outlines of the human shape we are to fit.

The original draft must be made on paper and used for a pattern to mark the material for cutting. Paper is cheaper than the most inferior stuff and is better adapted for cutting. The back pieces are to be executed first in every draft, according to the shape of the body. There are bodies of which the back breadth is more than $\frac{1}{5}$ of the upper width, although straightly built: these are the broad built trunks. Respecting the different other shapes of bodies, what is said of the back forming the fifth part of the upper width, holds good. In the event of a rounded back, the additional width can be allowed for by going beyond the back seam; and dealing with a bent in back, which forms less than $\frac{1}{5}$ of the upper width, the back piece is to be hollowed at the middle in order to conform with the measure.

HERE FOLLOWS A MEASURE FOR DIAGRAM 5, 6, 7, 8 and 9.

Length of the back $17\frac{1}{2}$ inches, prolongation $1\frac{1}{2}$ inches. Length of the skirt 32. Position of the arm $11\frac{1}{2}$. Breadth of the natural waist $8\frac{1}{4}$. Side length $8\frac{1}{4}$. Back bust-length $20\frac{1}{4}$. Front bust-length 21. Height of the shoulder 32. Breadth of the chest $16\frac{3}{4}$. Breadth of the back $7\frac{1}{2}$. Length of elbow 21. Arm length 32. Circumference of the arm hole 17. Width of the fist 11. Large upper width $38\frac{1}{2}$. Upper Width $36\frac{1}{2}$. Waist width 32. Width round the hips 35. Width of the seat $37\frac{1}{2}$. Width of the hollow of the gorge $17\frac{1}{2}$.

FIRSTLY, Previous to drafting, the whole upper width is to be divided into 5 parts, $\frac{1}{5}$ into 3 parts, $\frac{1}{3}$ again into 5 parts. These divisions are the normal proportions of the width of the back and the prominences at the neck.

SECONDLY, The position of the arm amounts to $11\frac{1}{2}$ inches; the width of the natural waist $8\frac{1}{4}$ inches; $8\frac{1}{4}$ deducted from $11\frac{1}{2}$ leaves $3\frac{1}{4}$. These divided into halves $1\frac{3}{8}$, again divided into thirds $\frac{11}{12}$.

Draw a square in proportion to the length of the back and the upper width; commence at a (length of the back) at the perpendicular line of the square, and mark $17\frac{1}{2}$ inches t to l . From t to n $1\frac{3}{8}$. Mark at the same time the width of the waist according to fashion. From there to r mark $\frac{11}{12}$. Draw a line from a to t upon the point n ; from a to b $\frac{1}{3}$, to h $1\frac{1}{5}$, now put the length of the back $17\frac{1}{2}$ to t , mark the side-length $8\frac{1}{4}$ (d to h) divided into halves, and again divided into thirds. From d to h $\frac{1}{2} o$; from d to oo $\frac{1}{3}$. Draw now from the perpendicular line horizontal lines, then put the back breadth to d , dd also to oo , cc . Draw lines at the points as marked on the pattern draft; draw a becoming shape of the shoulder at the hollow of the gorge, side seam, and the back part; divide the shoulder seam at the back part into 3 parts, name the points: the first fz , the second f . Now put the position of the arm on d . To ff are $11\frac{1}{2}$ inches, to m (width of the chest) $8\frac{3}{4}$. Draw a perpendicular line at the position of the arm ff to the waist line ff ; from there to U $\frac{1}{4}$ upper width. Draw a line from U to m —perpendicularly $\frac{1}{3}$ of the breadth of the shoulder in oblique direction; from the position of the arm fz to h is the situation of the hollow of the gorge of the front part. Put h to h at the front part; the front bust-length measure in oblique direction downward to the waist at ff , as shown at a in the back piece, topmost across the arching down to the waist at ff , deducting the seams; put on the back-bust-length measure from the position of the arm ff to h and a , divided into 5 parts. From a to i $\frac{2}{5}$, is the depth of the shoulder; $\frac{2}{5} \frac{1}{10} Z$ is the depth of the hollow of the gorge, $\frac{1}{5}$ to shape the armhole at the muscle V . From dd to ff in three parts, $\frac{1}{3}$ part from dd to e ; draw a perpendicular line, put the measure of the width of the natural waist on n , deduct the seams at the back and side pieces and measure on to the point ff . As much as the material still is too wide, so much must be drawn in at e ; the width of the shoulder at the back piece goes with the width of the hollow of the gorge h . Draw a line to the depth of the shoulder; put on the measure of the shoulder height 32 inches at ff down at the waist, draw it to the position of the arm, past it to f front part and f back part width of the shoulder on to n down at the back part. Draft the necessary height of the shoulder according to the measure. If a broader shoulder is wanted, it must come higher up at the back part and in the same degree be shortened in front. Shape the back and the front parts according to the pattern draft. The place and length of the "sugon", the width of the chest from ff to m to be divided into halves; the waist line from ff to u to be divided into 4 parts; $\frac{1}{4}$ of the latter to be marked at ff to u , where a line is drawn on $\frac{1}{2}$ and $\frac{1}{4}$. The side length is to be divided into halves. Then put on the width of the waist 32. As much as is marked off by the draft from ff to u (the greater width of the hip measure compared to the material), so much is to be drawn in at the locality of the hip point. Whether fly- or flap-fronted is determined by fashion. All the different trunks are drafted in conformity with this diagram.

THE CONSTRUCTION OF THE FROCK AND DRESS COAT SKIRT. DIAG. 8.

The skirt of the coat, this seemingly so unimportant part of the manly attire, forms, as it were, the barometer of the body; for, not only the outline of the whole body are affected by its fit, but the changes of fashion, too, are most visibly marked in it: the correct dressing of the trunk depends on its width and shape. The width of the seat is the largest circumference of the lower body, and is therefore as important as the upper width in the measurement of the trunk.

Cutting theories even of the present day do not attach much importance to the widths of hips and seat, and treat consequently the measuring of the whole body as superfluous. Bragging ignoramusses, still adhering to this theory of neglect, will say: "For such a miserable build a well fitting coat cannot be made." Whoever says so, does certainly not know how to make one! The skirts are usually drafted quite independently of the front parts. This is a wrong practice; for, as the side seam cannot be drafted correctly without putting on the back pieces, so the skirt cannot be constructed without putting on the front parts, especially as the narrow skirt requires the most attention. Diagram 8.

THE POSITION POINTS OF THE FROCK AND DRESS COAT SKIRTS.

Draw a perpendicular and a horizontal line. At the perpendicular line the lengths are marked; at the horizontal first: the width of the hips, then the width of the seat at the width of the hips. From the back pieces deduction is made proportionally, then the front piece is put on and the side part to the back; thus the skirt is formed. If a wider skirt is wanted, it must be drafted higher at the back going beyond the line; by this mode a wide skirt is obtained. In respect to the skirt of a dress coat the same rules that apply to a narrow skirted frock coat hold good.

The front cut is directed by prevailing fashion. Diagram 8.

THE CONSTRUCTION OF THE SLEEVE.

The arms, too, call for a well fitting covering which looks becoming in any position of the arm. The length of the arm down to the elbow, down to the wrist; the circumference of the armhole, width of the fist. The circumference of the armhole divide into $\frac{1}{2}$, into 4 parts, into 16 parts, into 32 parts.

RESPECTING MEASUREMENT.

Previous to measuring, the attire of the customer is to be adjusted as much as practicable. The pantaloons must not hang down at the hips, and the coat or dress coat must be buttoned, but not in any way disarranged. Measuring over a coat made of thick material ought to be avoided. Most suitable for this purpose are either a cloth coat or dress coat, even if not altogether fitting; because, by putting on the measuring belt, the basis for measurement will be formed nevertheless. It is, of course, necessary that in any such a case greater care must be used than would be required in the case of a well fitting coat.

Be careful also, that the person to be measured puts himself into his customary posture, because the fit of clothes depends entirely upon the measurement and the position in which it was taken. Anybody being measured whilst assuming a negligent posture cannot expect his clothes to fit when tried on before a mirror in an upright posture. The same will naturally be the result if the measure was taken on a person straightening himself too much; the clothes, when made up according to the measure thus taken, will not allow of any easy posture or motion.

Let the person to be measured stand perfectly at his ease without, however, dropping into a negligent posture. This done, put on the waist belt in such a manner, that the middle division of it touches the spine; run the two ends of the belt round the waist close over the hips and encircling the waist. After this is done, take the two ends of the belt into the left hand, draw them tight and change position from behind the person measured to the front without slackening the belt. Then with the right hand put the end of the belt without a hook underneath the one with a hook and fasten the belt by hooking it. Should the middle division mentioned before have been disarranged during the operation, draw it to its former place. Then mark the place of the top of the centre seam and depth of the arms at front muscle of each arm.

Measuring in general must be executed accurately and tightly; for additional width as required for comfort or by fashion, can be allowed for at the cutting. It must, however, be borne in mind that the condition of a really comfortable armhole depends on accuracy of cut more than on width: for the widest armhole can cause inconvenience if it be misplaced.

Should the person measured wish his clothes for the sake of comfort to be made up in a style deviating from the general rule, a memorandum of this is to be made and added to the measurement, in order to be reminded of it when cutting.

Measuring must be practised until it can be done without clumsiness, but with ease and firmness, elegance and celerity. To avoid keeping a customer waiting longer than absolutely necessary, it is advisable to have somebody at hand for the purpose of putting down on paper the measures which are being taken. This mode saves much time and allows of greater accuracy. The measuring and drafting can be executed with an inch or centimeter measure.

1. MEASURE. BACK LENGTH INCLUDING PROLONGATION AND SKIRT-LENGTH.

From the top of the centre seam down to middle division of the waist belt, back length and prolongation; from there skirt-length. A humpbacked person measure first the flat side, then over the hump down to middle division of the belt.

2. MEASURE. POSITION OF THE ARM.

From the chalk mark at the muscle at the arm (in front), draw the measure underneath the arm up to the highest arch of the shoulder blade on the centre seam of the back.

3. MEASURE. WIDTH OF THE NATURAL WAIST.

From the chalk mark at the hip to middle of the belt in horizontal direction.

4. MEASURE. SIDE-LENGTH.

From the chalk mark at the muscle of the arm down to the prominence of the hip where there is a chalk mark on the belt.

5. MEASURE. BACK-BUST-LENGTH.

From top of the centre seam in oblique direction across the arch of the shoulder blade down to chalk mark at the hip, from which mark the measure of width of the natural waist is made.

6. MEASURE. FRONT-BUST-LENGTH.

From the top of centre seam across the shoulder to front in straight direction past the arm, down to the chalk mark at the hip and waist belt.

7. MEASURE. HEIGHT OF THE SHOULDER.

From middle division of waist belt over arch of the shoulder blade and shoulder in straight direction down past the arm to the prominence of the hip at the chalk mark of the belt,

8. MEASURE. BREADTH OF THE CHEST.

From the chalk mark at the arm-muscle in horizontal direction across the chest to the opposite chalk mark on arm-muscle which is to be marked.

9. MEASURE. BREADTH OF THE BACK.

From centre seam horizontally to chalk mark at the arm.

10. MEASURE. LENGTH OF THE ELBOW.

Cause the person to be measured to hold his arm in a horizontal direction in such a manner as to form corners at the back as well as at the elbow, then measure from the back seam to the elbow.

11. MEASURE. ARM-LENGTH.

From the elbow measure further on to the wrist.

12. MEASURE. CIRCUMFERENCE OF THE ARMHOLE.

Accurately measured around the globe of the arm.

13. MEASURE. WIDTH OF THE FIST.

Tightly measured across the closed fist, i. e. knuckles.

14. MEASURE. LARGE UPPER WIDTH.

Circular measure underneath the arms in horizontal direction and touching the highest prominences of chest and shoulder blade.

15. MEASURE. UPPER WIDTH.

Circular measure. As this upper width is to be taken underneath the coat and over waist coat only in order to ascertain the thickness of material and padding of the garment over which measure was taken; particular attention must be paid that the measure do not slide off the highest arch of the shoulder blades. The coat is to be raised across the back as much as requisite for conveniently putting on the measure, which is to be done as high as practicable. Drawing it thus through underneath the arms, the measure will of itself assume a horizontal direction and stop without any difficulty at the highest point of the shoulder blade. Across the chest, the measure must run equally horizontal, and in so doing touch the highest points of the chest.

16. MEASURE. WIDTH OF THE NATURAL WAIST.

Circular measure round the waist closely over the hips. Creases, enlarging the circle, to be avoided; measure to be taken but moderately tight.

17. MEASURE. WIDTH OF THE HIPS.

Circular measure in horizontal direction over the highest prominence of the hips; to be measured about 2 inches below the waist circle.

18. MEASURE. WIDTH OF THE SEAT.

Circular measure in horizontal direction across the highest point of the seat.

19. MEASURE. FOR A VEST.

From the top of the centre seam commencing, measure the length, and the bosom opening.

20. MEASURE. FOR PANTALOONS. — OUTSIDE LENGTHS.

Side length. Put on the measure at the prominence of the hip as high up as the pants are wished to be made; note down the height, measure downward to the knee pan, mark the length, keep the measure steady at the hip and measure freely down to the sole of the foot.

21. MEASURE. INNER LENGTH.

Ascertain whether a tight or a loose fit at the crutch is wanted. Put the measure on accordingly, which ought to be taken between the fore and middle fingers, and measure down to the sole. Are the pants or breeches to be used for riding on horseback, let the person measured stand somewhat astride, which posture will give the required length.

22. MEASURE. WIDTH OF THE WAIST.

Circular measure for pantaloons or breeches underneath the vest.

23. MEASURE. WIDTH OF THE UPPER THIGH, RIGHT AND LEFT.

Circular measure close to the crutch passing underneath the seat in horizontal direction, round the right thigh. Nothing voluminous must be allowed to remain in the pockets, for it would interfere with the measure. Then measure the left thigh in precisely the same manner.

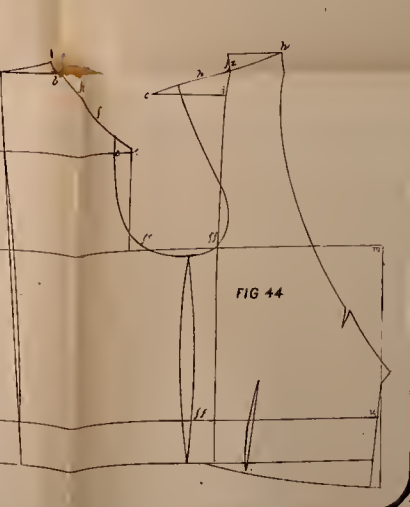
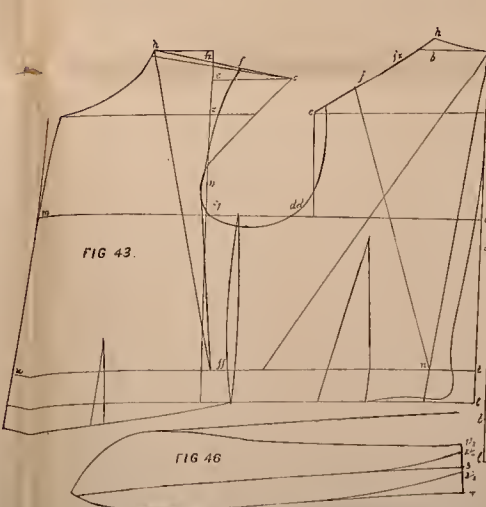
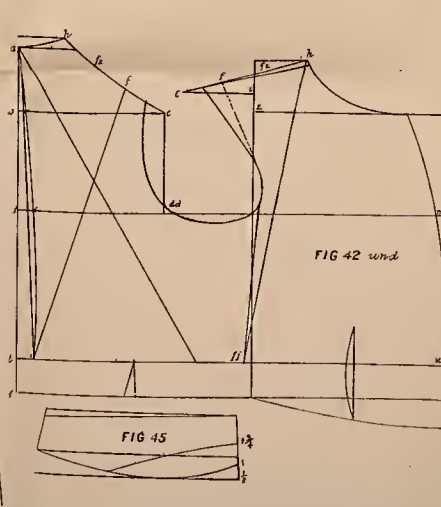
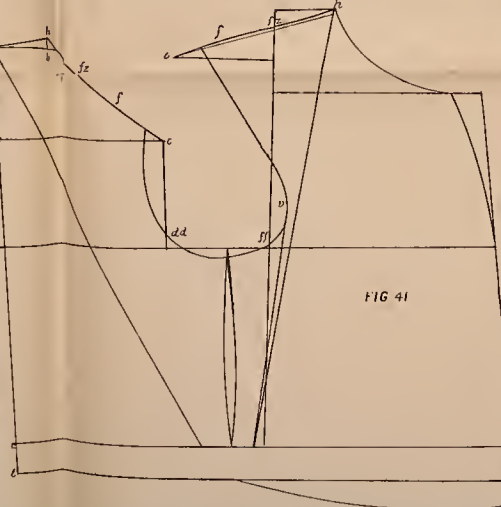
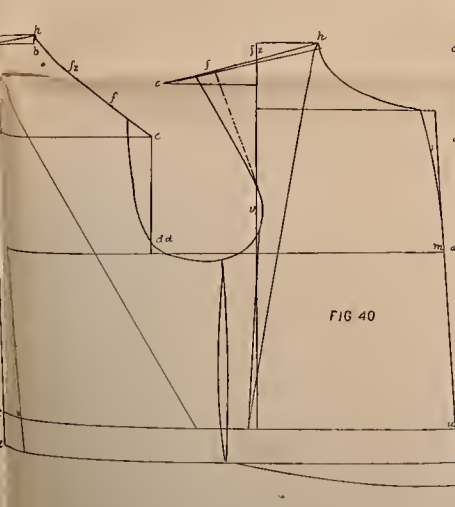
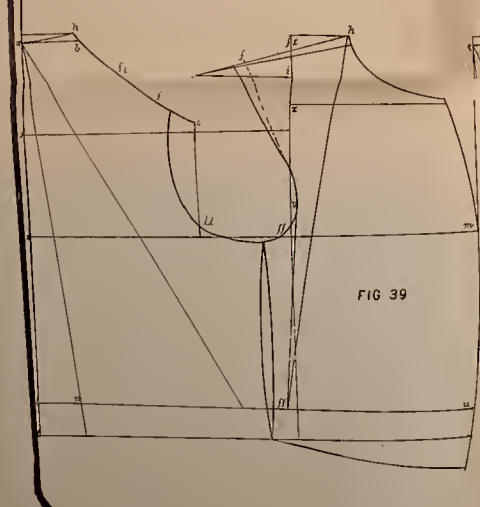
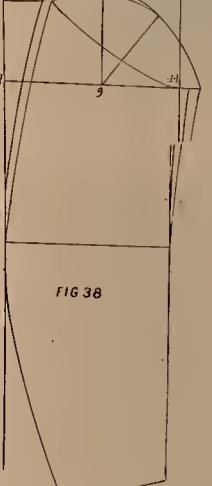
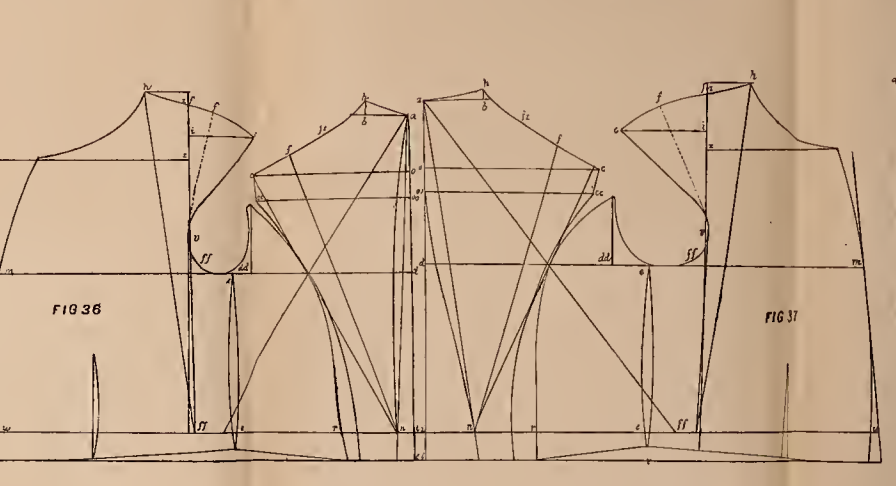
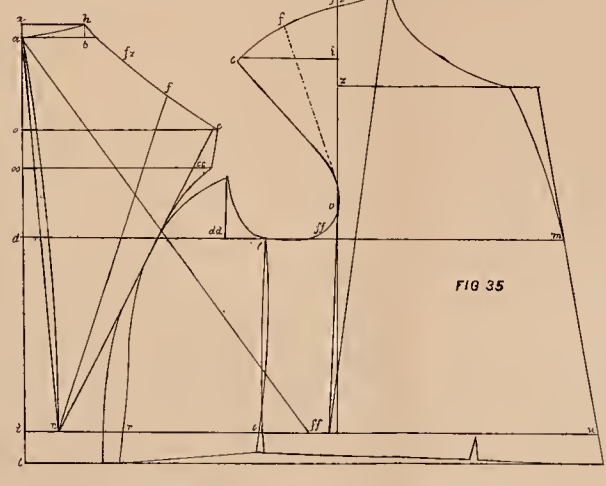
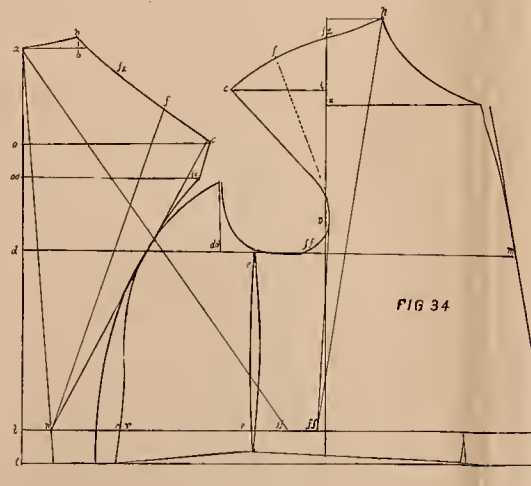
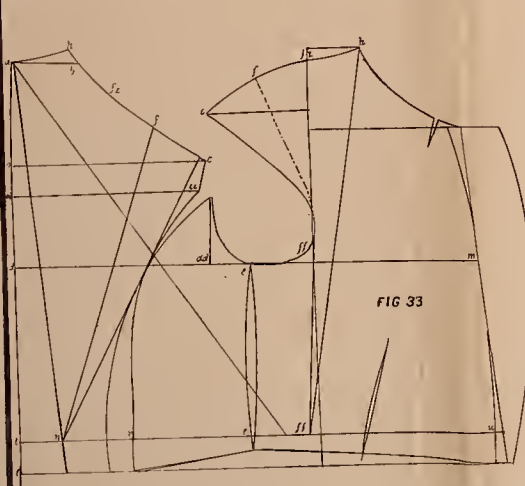
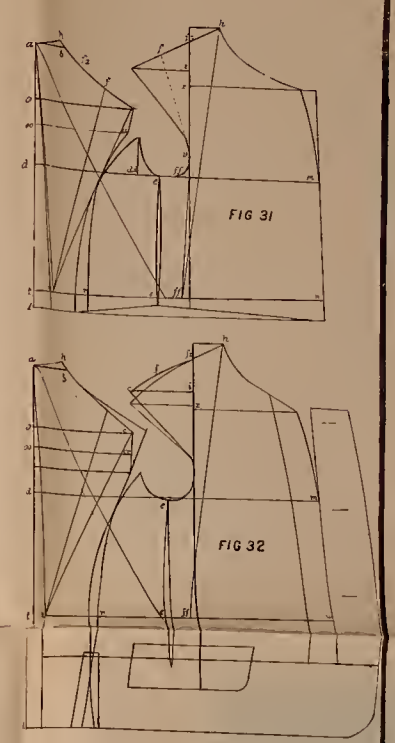
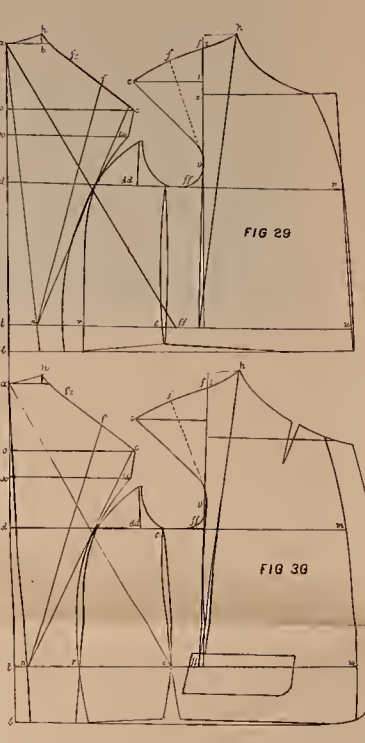
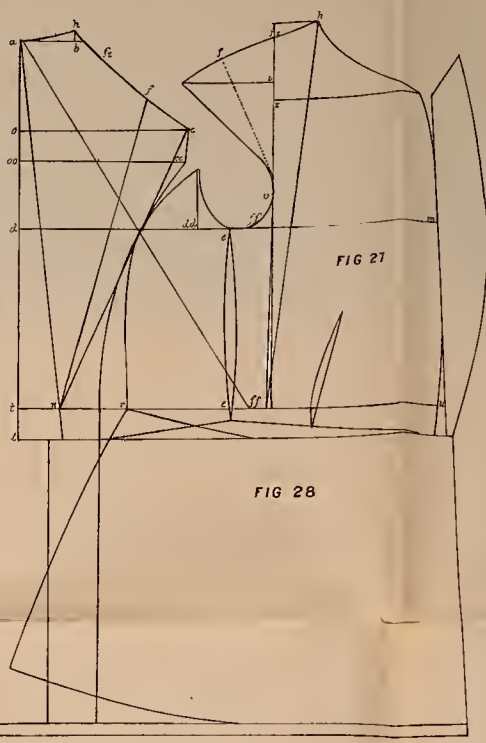
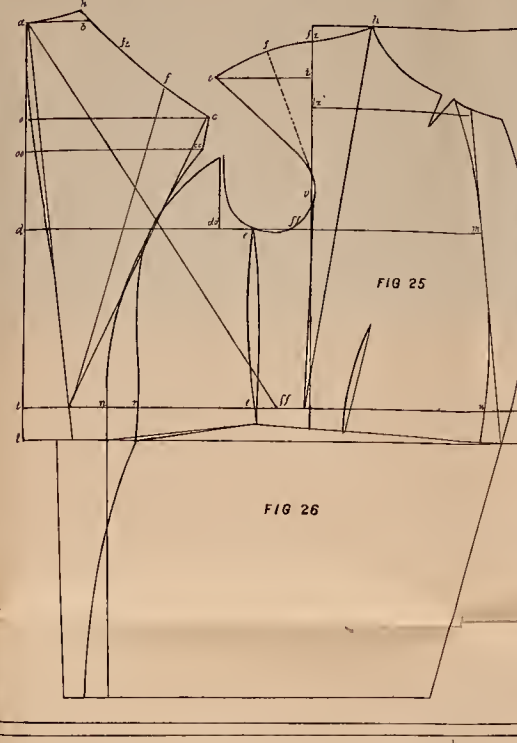
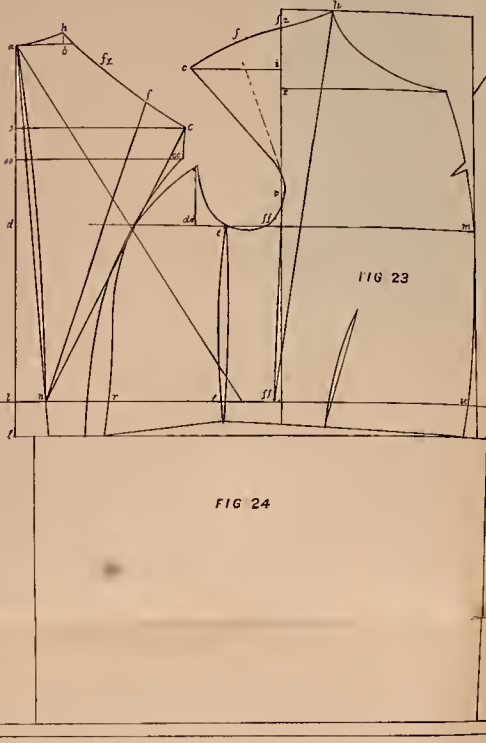
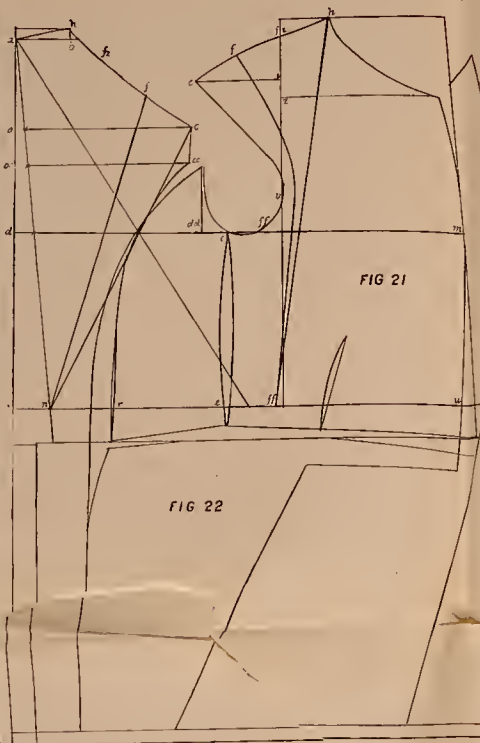
24. MEASURE. WIDTH OF THE KNEE AND CALF.

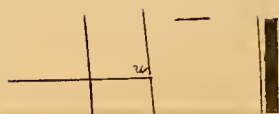
Circular measure over the highest arch of the knee pan, and the largest width of the calf of the leg.

25. MEASURE. WIDTH OF —

the foot according to —

PLATE 2 A TREATISE ON THE MEASUREMENT OF THE HUMAN BODY INVENTED BY WILHELM SELLE CHICAGO ILL.





down separately and attended to at the cutting. Besides this, the different constructions of the leg are to be measured and noted down. Of these, five are to be specially observed: 1st, straight; 2nd, upper high arched and hollowed in the crutch; 3rd, knock-kneed; 4th, bandy; 5th, bow legged. Diagrams 57, 58, 59 and 60.

MEASURES OF PANTALOONS. DIAGRAMS 18, 19.

Length of the leg from the prominence of the hips down to the knee 24 inches, whole length 43 inches. Inner length of the leg 33 inches; width of the waist 30 inches. Width around the hips 35. Width of the seat $37\frac{1}{2}$. Width of the right upper thigh 21, left 22. Knee 15. Calf $15\frac{1}{2}$. Width of the foot 18, 1 inch hollowed. The pattern draft is to be made on paper because it can be done more accurately, and, should the material be striped or checked, the back pieces can be laid precisely in conformity with the stripes.

THE DRAFT OF THE FRONT PART OF PANTALOONS. DIAGRAM 18.

Draw a perpendicular and a horizontal line; put the measure at a perpendicularly down to the knee c 24. The whole length 43 inches. From d to b 33 (inner length of the leg). Divide the widths of waist, hips and seat each into 4 parts; the width of the upper thigh into 8, into 16, into 24 parts; draw horizontal lines at a , b , c and d . Then put horizontally $\frac{1}{4}$ width of the seat at a to i ; from i back to f $\frac{1}{4}$ width of the waist. Line b to k $\frac{2}{3}$, to g $\frac{1}{3}$; from g back to s $\frac{1}{24}$. Width of the upper thigh, line d to e $\frac{2}{8}$, to M $\frac{1}{16}$. Draw now a line from e to p to the horizontal line; then from m to s a line. Compass from g to p , to k and oo . Draft the crutch; shape the inner length of the leg from g perpendicularly to the horizontal line c . As that side to which the person dresses requires more space, it must be drafted wider from the crutch up to the waist proportionally, as the diagram represents; $\frac{1}{4}$ width of the hip is accordingly put on from f to b , l and d . Shape the side seam. If the material has got a galoon (side stripe), the hollowing is to be done at the back piece alone. If the pants are to have pleats, the additional width must be given at the side.

TO DRAFT THE BACK PIECES OF PANTALOONS.

To be commenced by drawing the side line and marking the points a , b , c and d at the length line of the front part. Take half of the width of the seat, deduct $\frac{1}{4}$ width of the waist; the remainder put from a horizontally to l , which mark. The breadth of the front parts put on d and to m , which mark. Put the line c and i upon m and l ; put also the angle on p and g ; draw a perpendicular line and also a horizontal line to the length of the crutch $\frac{1}{4}$ of the width of the upper thigh, from p across g , mark the amount; from p to a the amount to l upwards. Cast up half the width of the hips with addition of the seams at the hips. From the height of the back piece draw a line to g . If the width of the hips is too large compared with the width of the waist, a "sugon" is to be cut out at the place indicated in the diagram. Then the back piece of the pants is drafted at the crutch after the front part. From c to d in 3 parts: 2 parts from c downward; there the width is made out. Draw a line downward, add the width round the foot from d horizontally, give the widths of the knee and calf. From the crutch seam to c at b the width of the upper thigh, with addition of the seams in the neighborhood of the seat. The width of the seat with addition. Shape the back part of the pantaloons as the fashion plate directs. Diagram 19.

In the case of an obnormal shape of the leg, the point where the hollow shows itself, must be ascertained, and the amount of it deducted and then again added at the opposite side of the bend. If the leg from the knee downward assumes an oblique position, half the width which the ankles stand apart, is to be added to the outside length of each leg of the pants. If the legs are constructed abnormally in a reverse way, an operation, reversed to the former is needed. Diagram 57.

THE CONSTRUCTION OF GAITERS. REPRESENTED IN DIAGRAM 56.

As long as the gaiter is to be, as high up put the length measure; mark that point a ; from there to the knee b , calf c , ankle d , whole length e . At these points draw cross lines: at a , width of the thigh; at b , width of the knee; at c , width of the calf; at d , width of the ankle; at e , width of the heel round the heel of the boot and the ankle joint l . Divide the measure of the circumference of the ankle joint into 3 parts, into 15 parts, into 30 parts.

Draw now a perpendicular and a horizontal line; put on half of the width of the thigh, and mark. From that mark draw again a perpendicular line downward. Then draw the length measures from a to b , to c , to d and to e . Note down the distance to d . Draw horizontal lines, $\frac{1}{3}$ length of the gore, $\frac{1}{3}$ height of the gore. From d to e $\frac{1}{15}$, $\frac{3}{15}$, $\frac{1}{15}$. Horizontally the lengths $\frac{2}{15}$, $\frac{3}{15}$. Shape the line round the ankle joint. Put on in oblique direction from the heel to the instep, half the circumference of the ankle joint; the widths of the ankle, the calf, the knee and upper thigh. Then shape the gaiter.

The above rule applies to all kinds of gaiters.

Put the measure on the perpendicular lines, mark $a \frac{1}{32}$ to $d \frac{1}{4}$. Draw a horizontal line from d to $g \frac{1}{4}$, to $dd \frac{1}{2}$; from dd to $f' \frac{1}{16}$. Put the compass on g and dd , draw the globe shape; the remainder according to pattern draft. The sleeve is drafted conformably to the shape of a normal body, and should, in some cases, a higher shoulder be wanted, mark off proportionally from the sleeve-globe. Diagram 9.

CONSTRUCTION FOR VESTS.

Vests are drafted after the fashion of Coats; the front part by the back part. In the front part at the hollow of the gorge, the point of the shoulder comes in with $\frac{1}{9}$ of the hollow of the gorge nearer the neck; and the $\frac{1}{9}$, which the front part shoulder is shortened, is added in length down below. At the armhole, too, $\frac{1}{9}$ more is cut out. In respect to the upper width, enlargement of the chest and the seams, the rules of coatcutting apply as well. All that is to be observed is, that no additional widths need be allowed for buttons and button holes. The rest is directed by fashion. Diagram 10.

THE CONSTRUCTION OF SACK-GREAT-COATS, CLOAKS OF DIFFERENT KIND AFTER THE COAT PATTERN.

If the cutter has got the measure of the coat of the person, for whom a sack greatcoat, cloak or cape is to be made, the only additional measure to be taken is that of the width of the hollow of the gorge over the coatcollar and the length. As much as the back piece is shown to be wider according to the large upper width, so much is it to be put higher at the hollow of the gorge. As much as the difference amounts to, between normal width and the width of the measure for the greatcoat, so much must the shoulder in front come longer, the point of the hollow of the gorge come nearer to the neck, the position of the arm advanced, and the chest come broader, as diagram 47 and 48 represents.

The breadth of the back piece of an Inverness cloak amounts to $\frac{1}{4}$ of the large upper width, and $\frac{1}{8}$ of the latter is the width of the hollow of the gorge at the back piece. As much as the large upper width according to the $\frac{1}{5}$ principle, is larger than the normal width, so much comes the back piece higher at the hollow of the gorge. The armhole is drafted with and without sleeves.

The half cape is to be put on at the front and at the hollow of the gorge, and while in this position the front and the gorge is drafted, the width also is given. The front point of the gorge is the point from where the compassing is to be executed, as shown by diagram 47.

A half wide cape is to be drafted after the coat pattern. The breadth of the back piece amounts to $\frac{1}{4}$ of the large upper width, and $\frac{1}{8}$ of the latter again is the width of the hollow of the gorge at the back piece. If the cape is not to have a great width, the front and the back parts come wider apart at the hollow of the gorge. The triangle formed between the front and the back pieces at the gorge, is divided into halves, and a line is marked in the middle of it which is prolonged upwards till a short blunt triangle is formed, as represented by diagram 54. From the upper point of that triangle the compassing of the length must be executed.

As to cloakeapes, their back part length must be marked. This done, divide the width of the hollow of the gorge into 6 parts. From a to $b \frac{1}{2}$, to $c \frac{1}{2}$; from b perpendicularly to $d \frac{1}{2}$; from d horizontally $\frac{1}{18}$. From there compass to the indicated lengths. Draft hollow of the gorge according to the front part of the cloak. There are two different drafts as represented by diagram 55.

CONSTRUCTION OF PALETOT WITH CAPE FORMING THE SLEEVES.

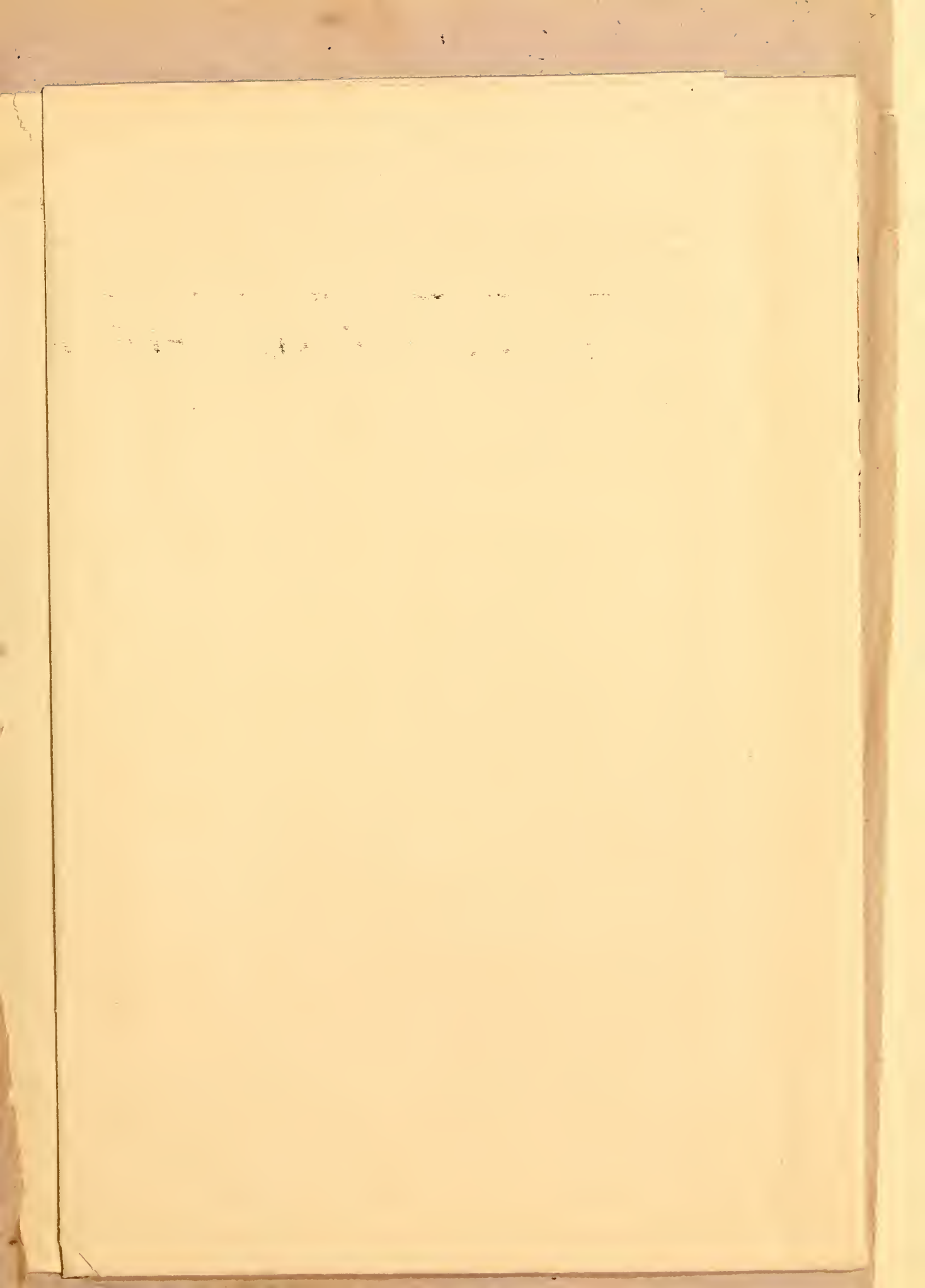
REPRESENTED BY DIAGRAM 49 AND 50.

This paletot is constructed after the coat pattern and has an upper width of 29 inches. It must be observed that the breadth of the back amounts to $\frac{1}{4}$ of the upper width and that it comes higher up at the hollow of the gorge. The draft of this coat gives the widths and waist-lengths.

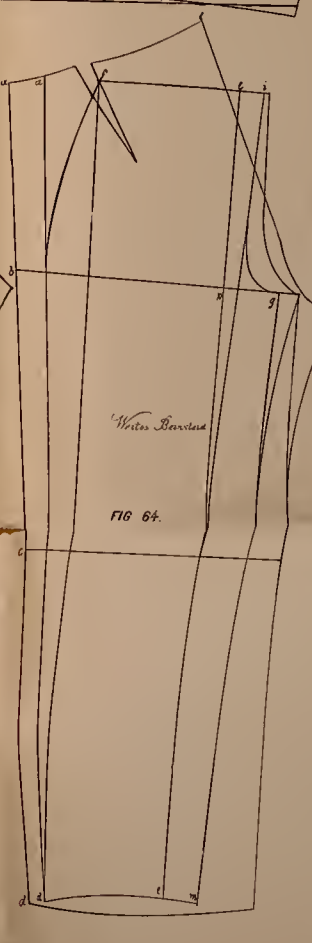
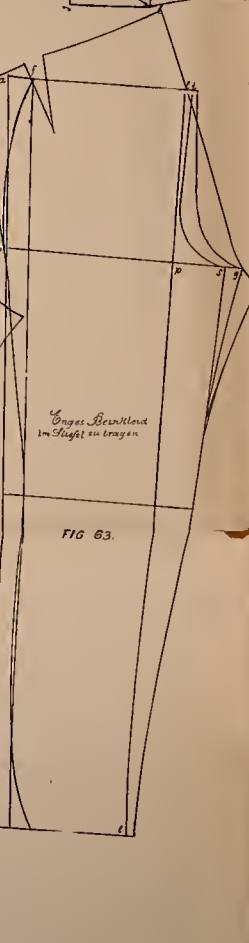
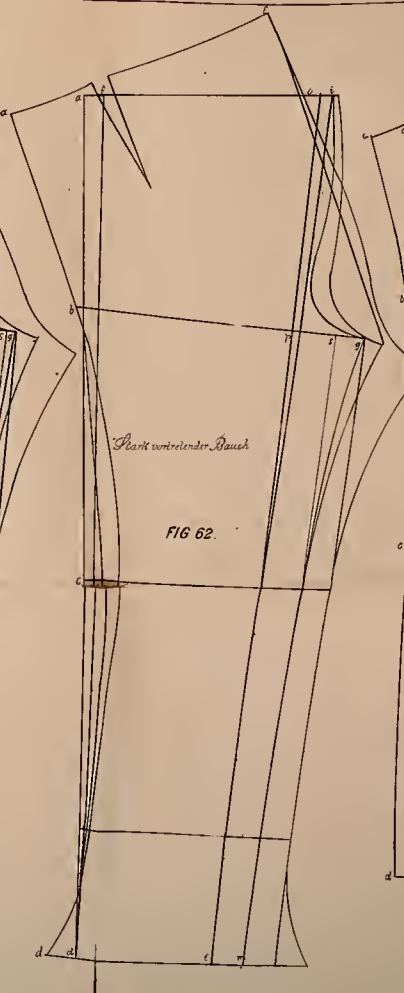
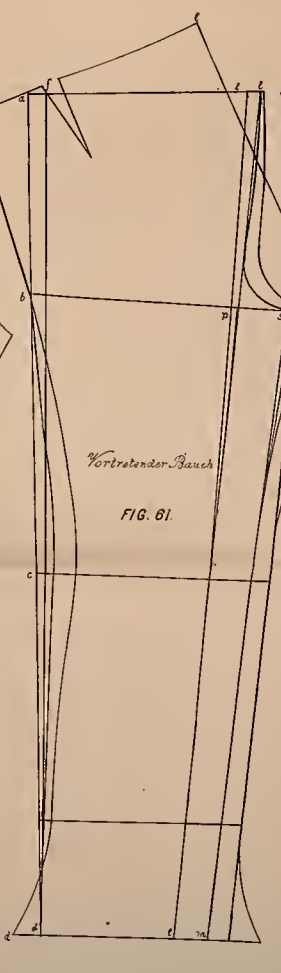
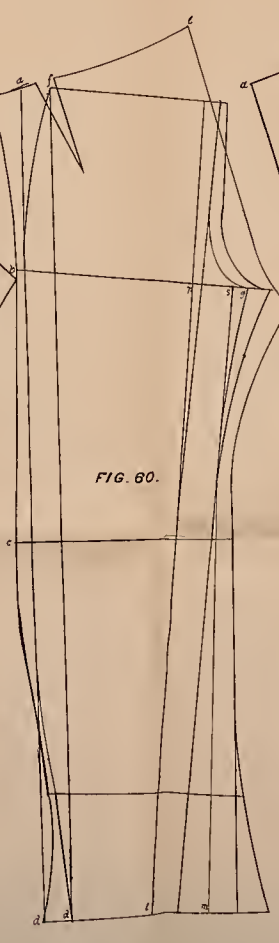
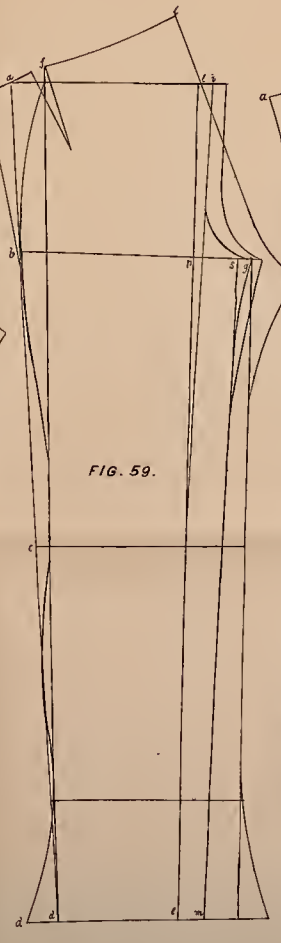
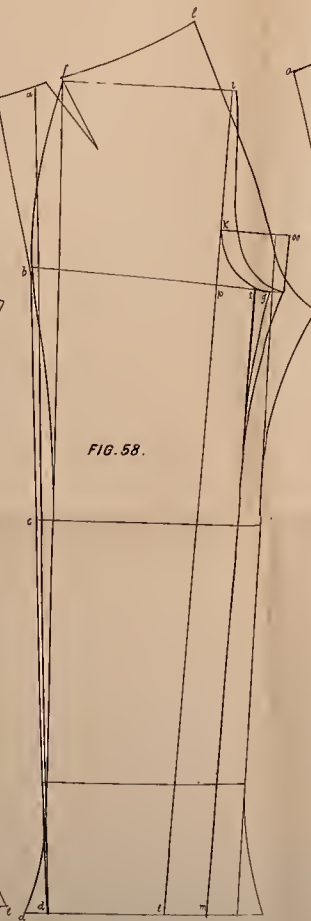
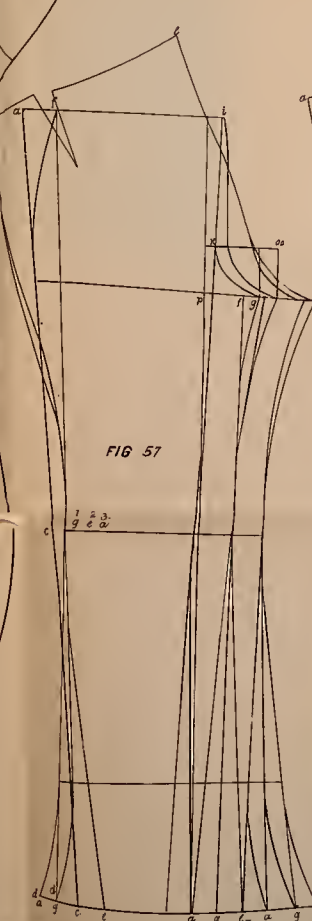
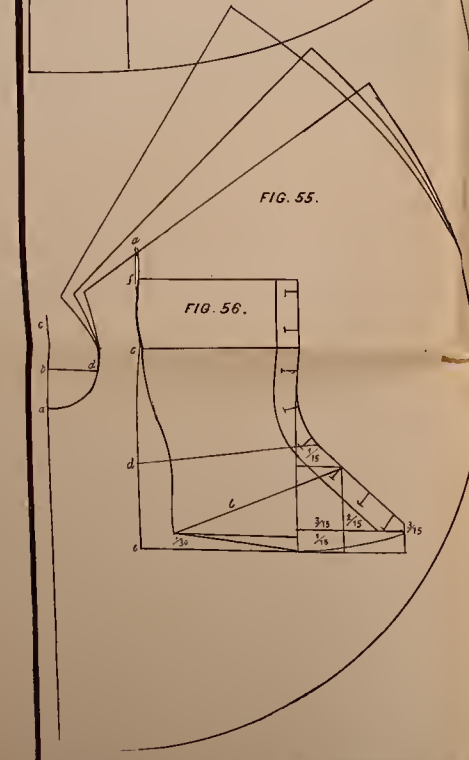
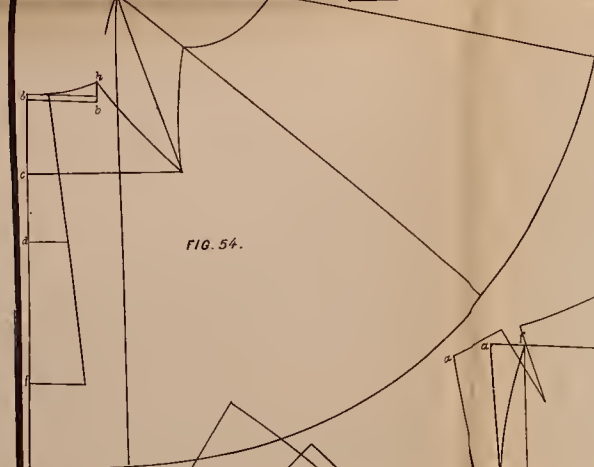
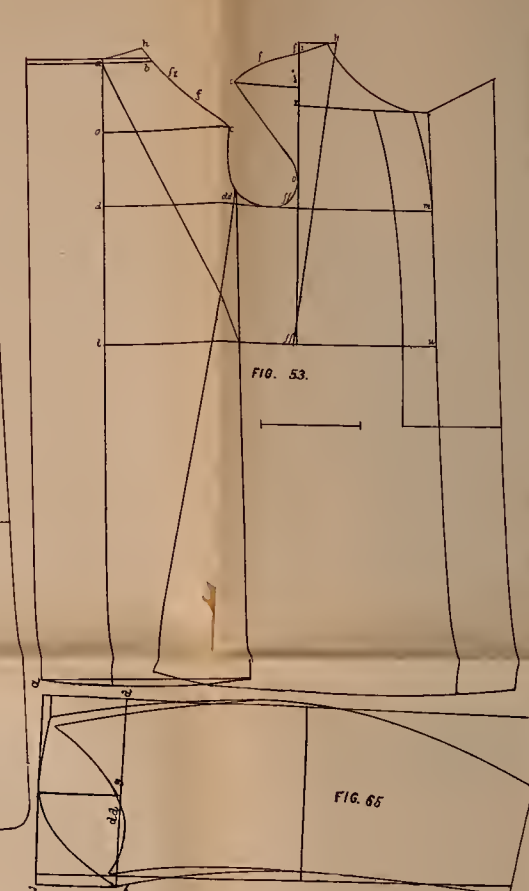
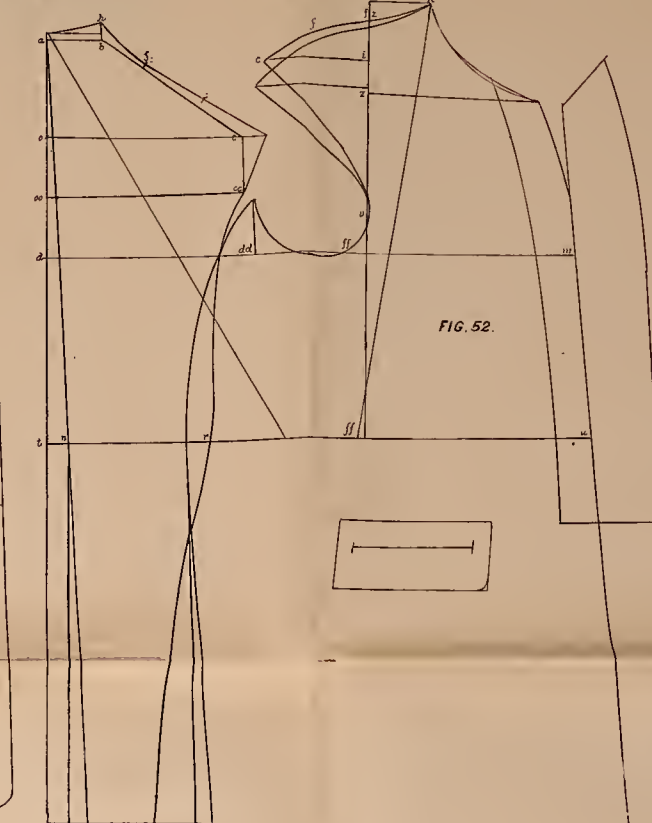
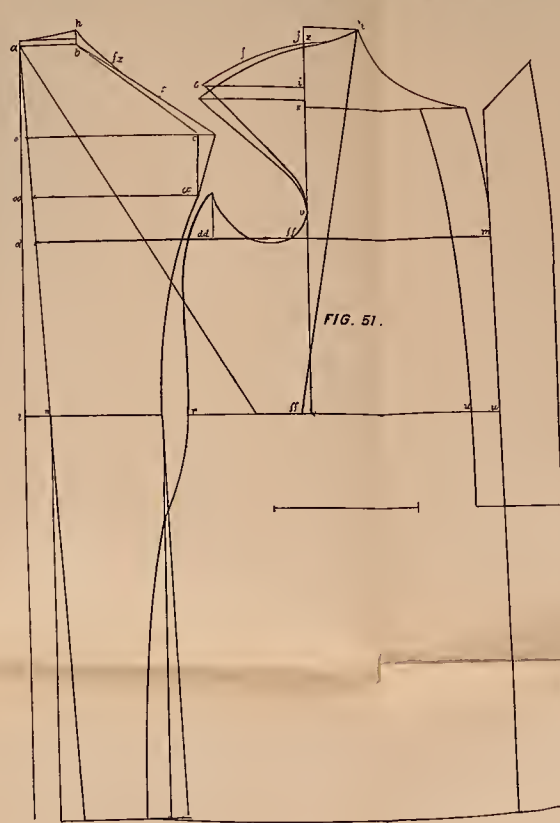
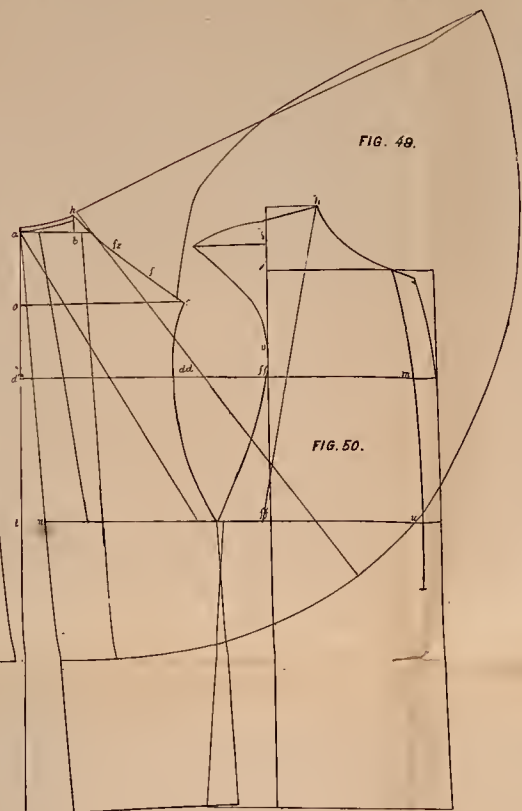
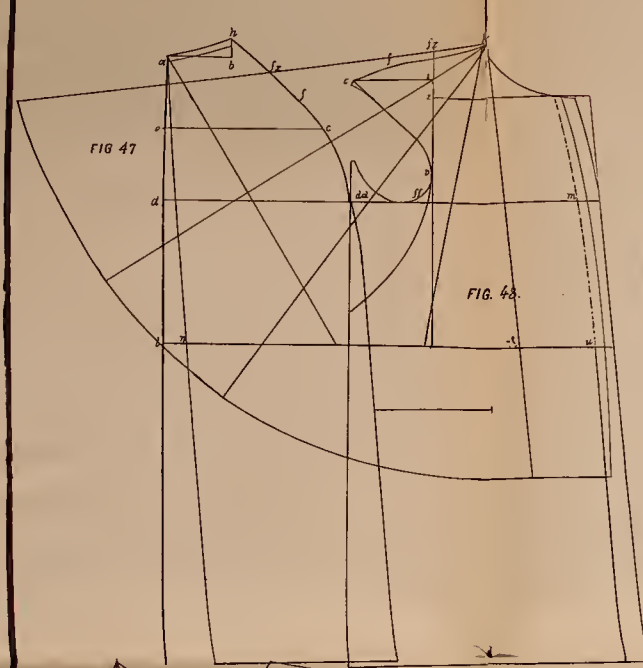
The length of the cape then is marked, the back piece put on, the position of the shoulder drafted, and the front part laid on in front. The necessary width can be added at the globe of the arm and in front. From the point of the gorge at the back the compassing is to be executed.

CONSTRUCTION OF THE PANTALOONS.

Just as varied as the shapes of the human trunks, are the legs we have to clothe: the width of the waist, the hips, the seat, upper thigh, knee, calf and the foot, present frequently a shape deviating in many respects from what we have called normal proportions. Without paying close attention to these deviations, a well fitting pair of pantaloons cannot be drafted. An accurate measure of all the points of the leg, besides the length measure, is necessary in order to know their proportions. All the different measures for pantaloons are to be taken in the same way and as tightly as the measure of the waist, because the drafting depends entirely upon this accuracy. The requirements of fashion are represented by the fashion plates;—and the wishes of the customer can be put



TAFEL 3. DIE KOERPER MESSUNGS LEHRE ERFUNDEN VON WILHELM SELLE CHICAGO ILL.



Vortretender Bauch

Platt vortretender Bauch

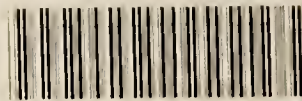
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