

No 941

THE TAILORS'

COMPLETE AND SCIENTIFIC GUIDE:

*TT 500
1824*

BEING A MATHEMATICAL PRINCIPLE FOR

DRAUGHTING AND CUTTING GARMENTS

TO FIT THE HUMAN FORM.

BY

FRANCIS H. TAYLOR.

ILLUSTRATED BY THEOREMS, DIAGRAMS, AND EXAMPLES.

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CHICAGO:

S. P. ROUNDS, PRINTER, 46 STATE STREET.

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By FRANCIS H. TAYLOR,
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INTRODUCTION.

[The following introduction is copied from the first edition of my work, published in New York, in 1843:]

GENTS:—Without a hope or possibility of deceiving you in the premises, and with perfect confidence and conviction of its truth, I present for your consideration and examination, “A MATHEMATICAL PRINCIPLE FOR DRAUGHTING AND CUTTING GARMENTS TO FIT THE HUMAN FORM,” and solicit your most critical and rigid scrutiny into its pretensions, merits and utility. I know, and in truth no one can be ignorant of the fact, that your patience has been exercised by the frequent and often audacious intrusion of “New Systems,” “Improved Rules,” &c.; and if the one now presented could be classed with them, I should conceive it an insult to your judgment and experience to ask an investigation into its principles; but I flatter myself that I shall be able to demonstrate and convince you that such is not the character of this work. Indeed, so far from being based on doubtful or speculative theories, I hold myself responsible to prove that it rests on the same foundation as do all geometrical propositions, and is draughted by the application of the same mathematical rules as are used in plain, spherical and trigonometrical surveying.

Geometry deals in realities—rests on admitted principles, and its process of investigation is the test of philosophical truth, therefore it would evidently be most disastrous to my interests, to lavish time and money upon a system of “doubtful disputation;” hence it was my first object, after the discovery of the application of these principles, to arrive at the fact of its being so. With this view I submitted the same to the examination of a celebrated mathematician, in connection with four surveyors, two of whom were in the surveying department of Government, who, after giving it a careful, and, as I believe, an impartial investigation, unanimously pronounced it true in its principles, and simple in its application; which decision was announced in one of the public journals. In addition to this testimony, the authorities of the Patent Office, after examination, decided that *the principles of this work were purely Mathematical—founded on Geometry.*

To this I might append that of the most distinguished Master Tailors of the City of New York, who after giving it a practical trial of weeks and

months, have attested their belief of its truth and applicability; but it seems quite unnecessary here, as I do not solicit or expect any person to decide on the truth or merits of this discovery by the evidence of others, but solely on their own conviction, after a full explanation on my part, and a minute examination on theirs.

Without intending or wishing to give offense to the author of any system of cutting, I would here remark, that in the prosecution of this science, I use no division of measure or protractors, where one form is produced by and from a similar one: I use no circuitous measurement, where its direction from intermediate points would come in contact with any object, (say the arm) where friction must necessarily produce false distances, as well as infringe on one of the most essential principles in mechanical philosophy. Neither do I ask the assistance of shoulder straps, with studs, buckles, &c., or a complication of all or any of these assumed means of arriving at the form to be fitted; but I at once obtain the shape and position by taking the contour or outline of the same, and to this form, without reference to any other, I apply certain and infallible principles for ascertaining its true surface. On this subject an author of a system of cutting, has truly remarked that "human forms, like the features of the human face, are as various, almost, as they are in number;" and it seems as impossible to trace by meandering measurement the human form, as it would be to describe the expression of the countenance by the same means.

In this view, it is obvious that the authors of imperfect systems have not assumed the true principles of science in their works or exemplifications—that they have marked out no certain path to perfection, because they have given no evidence whatever, that they have made the discovery, of the general law into which leads induction, and consequently, that the progress of their followers is errative and uncertain; for unless a man possess the intuitive perception of the truths of science, or receive it by a course of instruction founded on true principles, a morbid ignorance and hesitating uncertainty will embarrass all his thoughts, or a precipitate, unwarranted assurance will mark his course through life.

With these remarks, I am, gentlemen, yours, &c.,

THE AUTHOR.

NEW YORK, 1843.

A MATHEMATICAL PRINCIPLE

FOR

DRAUGHTING AND CUTTING GARMENTS

TO

FIT THE HUMAN FORM

BY FRANCIS H. TAYLOR.

The principles of which are based upon the measurement or survey of all lines which can be the object of measurement, viz: horizontal lines, vertical lines, and oblique lines and all angles, to-wit: horizontal angles, vertical angles, which comprise angles of elevation and depression, and oblique angles; and on curves and calculation of unknown and required parts, and upon the general principles of surveying bodies and forms, both plain and spherical, as set forth in the works of Davies, Guthrie, and others, and applied as follows:

1st. By ascertaining the area or content of all or any portion of the human form.

2nd. By ascertaining the length and direction of the bounding and transverse lines.

3d. The accurate delineation of the whole or any part thereof, on any material that may be used in the prosecution of said discovery.

SEC. 1. In taking by survey or measurement the outlines of the human form, or so much thereof as is to be fitted, either dressed, partly dressed, or undressed, by longitudinal lines on the outside of the form, either by enclosing or enclosing the body in any manner, and in any material, as the means of arriving at the outlines of the form, or by transparencies of any description, or by placing the form or the shadow thereof against any substance by which said form can be traced in outline; or by plumb lines, rods, plane surfaces, perpendicular and at right angles with, or parallel with the plane on which the form required to be surveyed or measured is placed.

SEC. 2. To which end, (of obtaining the outline of the human form,) I place the person's back against any substance or material on which the form can be traced, and strike the outline of the whole body, or so much thereof

as is to be fitted, upon said substance or material, (see plate 1, fig. 1;) or I place the person against a transparent substance or material, and by a light acquired or placed in front of said person, I throw his shadow upon said substance, and trace the outline of the form from the shadow thereof: or I place the person in a horizontal or perpendicular position, and measure horizontally and perpendicularly the distances between all necessary points for fitting garments, as shown and signified by stars,* thus in plate 1, fig. 1. Or I encase or enclose the body in any manner or material by which I may obtain said outlines of body, or necessary points or parts thereof, as shown by stars as aforesaid. This done, I place the side of the person against any substance, material, or transparency, or I enclose or encase the person, and trace a side view in the same manner as aforesaid, and shown in plate 1, fig. 1.

SEC. 3. The outlines or necessary points of form thus obtained upon any substance or material, the same is placed upon a table, and longitudinal and latitudinal lines are drawn thereon, as shown in plate 1, fig. 1, and in fig. 2.

SEC. 4. The longitudinal lines C, on the back view or outline, are as follows:—

- 1st. Longitudinally on outside of arm.
- 2d. do through the arm pit.
- 3d. do from side of the neck where it joins the body.
- 4th. do through the centre of the body.
- 5th. do from side of the neck on reverse side of the body.
- 6th. do through the arm pit on reverse side of the body.
- 7th. do outside of the arm on reverse side of the body.

SEC. 5. The longitudinal lines C, on the “side view,” or outline, are as follows:—

- 1st. Longitudinally, passing down extreme front of body.
- 2d. do from collar bone in front of the neck.
- 3d. do from back of the neck where it joins the body.
- 4th. do passing down the extreme back of the body.

SEC. 6. Latitudinal lines B, are next drawn on the “back view,” or outline, as follows, plate 1, fig. 1 and fig. 2.

- 1st. Latitudinally across the point where the neck joins the body.
- 2d. do across the point of the shoulder where it intersects C, line 2.
- 3d. do across, under the arm where it intersects C line 2 in the armpit.
- 4th. do across the waist over the hips. N. B. The latitudinal lines drawn on the “back view,” are extended across the “side view,” and intersect the longitudinal lines thereon, as shown in fig. 2.

SEC. 7. The scye or arm hole is formed next, as follows: A square is formed on “side view” fig. 3, two sides of which square are composed of latitudinal lines B 2 and B 3 on “side view” fig 2; latitudinal line B 2 passing over the top of the arm, and latitudinal line B 3 passing under the

arm. An equal distance between these two lines is taken by the dividers, one leg of which is placed upon the outline of back of "side view" A, in the centre between B lines 2 and 3, and the other leg of dividers is carried across parallel to this centre A to C, where draw a line D which forms a square, in which square describe a circle, which circle forms the scye, or arm hole.

SEC. 8. The gorge or curve of the neck is next formed, as follows: A square E, F, G, H, fig. 3 and 12 is formed on the "side view," having for its base a line drawn obliquely with the curve of the neck i. j. in which describe a circle, and that part or segment which falls upon the curve of the neck, forms the gorge r. r. fig. 3. A quadrant of this circle is described on the top of the half of "back view," T, U, V, fig. 3, by placing one leg of the dividers on 'c, line 4, half the distance of the circle of the scye from the top of the back on said line c 4, and with the other leg strike the quadrant.

SEC. 9. The "back" and "side views" are now cut out by the outlines and notched V, as shown K, L, M, N, O, P, Q, fig. 3. Required lengths are next obtained by throwing curves upon straight lines. Proceeding to get lengths upwards from B, line 3, the notch O, fig. 4, is placed on B, line 3, where it intersects c, line 1, and is turned upwards on c, line 1, until it arrives at the top or front of the gorge of forepart, which is marked R, fig. 4. Next take the pattern of the back and place notch Q on line 4, where it intersects B, line 3, and turn it upwards on the curve of the side seam of forepart until it arrives at its top, and as much as said back pattern falls short of reaching B, line 1, so much must be added thereunto, as shown by dotted line s s, fig. 5.

SEC. 10. The forepart and back patterns are next placed in their original positions upon the longitudinal and latitudinal lines, and from the notches P, where lines c 4 and B 3 intersect, the back and forepart patterns are turned downwards until the bottom of patterns strike line B 4, and as much as they overrun said line, so much they are to be shortened, see W. W., fig. 6. Next place notch Q on back pattern at the intersection of lines c 4 and B 3, and turn it downwards on the curve of side seam of forepart, and as much as it falls short of reaching line B 4, so much must be added thereunto. See dotted line x, fig. 7.

SEC. 11. The fit of the back and forepart pattern being now perfected, the patterns are placed on their original outlines, and a gentle curve is given from the lower part of the shoulder Y, 8, to the front of the circle of the scye Z. The difference between a square and a spherical body is now added to the forepart f. f. from the dotted or outlines of the same.

SEC. 12. The skirt of the coat is next formed, by a line h, fig. 3, 4, and placing notches † † upon the intersection of c, line 4, and B, line 7, fig. 9 and turning the skirt and back skirt of coat upwards on line c 4, until the top thereof arrives at B, line 4, and as much as the curves of said skirts overrun this line, so much must be taken off. See a, a, fig. 9.

SEC. 13. The sleeve is next formed on the circle of the scye, lines B 2, and B 3, forming the upper and lower sides of the square E, F, G, H, within which the circle of the scye or sleeve-head is described; which being divided into quarters at right angles with the rectangles of the square produces the ground-work for forming the sleeve-head. The diameter line a, a, is extended, and one leg of the dividers is placed at the intersection where the radius h, fig. 11, bisects the arch of the circle, and carrying the other leg upon the opposite side of the diameter, strike the segment c, c, which segment forms the top part of sleeve-head. Continue the perpendicular line b down to the elbow, which it will intersect; the elbow and sleeve hand are formed by describing fig. 13. The under part of the sleeve-head is formed on the same circle of the scye, but the arm, when the outlines were taken, was in a horizontal position, and the length of the under side of the sleeve was consequently lengthened from the pivot or lower part of the arm to the elbow, equal to one-half of the radius of the scye; hence place one leg of the dividers at the point * above the circle equal to one-half of the radius of the circle, and move the other leg downwards equal to the diameter of the circle and strike the segment f, f, which forms the under sleeve-head; then draw lines g, g, and the sleeve is complete.

SEC. 14. The pantaloons are drafted from the outline of the form, and by the same rules as sleeves and other spherical bodies, (see fig. 11 and 13.) The stride of curve of the crotch or junction of the legs to the body, is formed by describing a quadrant equal in size to the segment of the circle A E, upon the diameter line A F; the lines f t are formed by the lines t h, fig. 15.

SEC. 15. The example, or fig. 16, showing the principles by which the under part of the sleeve-head is formed, is laid down on the mathematical principles of obtaining heights and distances. A is the pivot of the arm; B is where the under part of the sleeve joins the fore part; and C is the elbow; D is a sweep from the pivot A; and E is a sweep from B, and the distance between the lines E D, is the necessary addition required on the under part of the sleeve or dotted line in the various elevations F to G of the arm.

SEC. 16. A circle is a plain figure described by a right line moving about a fixed point, as A C about C, fig. 10. A circle within a square, E, F, G, H, fig. 12, is described by placing one leg of the dividers on the intersection C of lines passing from the angles of a square. Fig. 13 is described by dividing a circle into four equal parts, and placing one leg of the dividers on the arch A, where it intersects radius ÆE , and striking with the other leg, from the arch opposite, the segments B B.

FORM OF MEASURE BOOK.

FOR COATS.

FOR PANTALOONS.

Back View. | Side View. |

Circumference of waist.
From heel to instep.
Across ankle, do.
Across knee, do.
Across hips, do.
Waist, back view.
Length of leg.
From hips to where the leg joins body.
From waist to hips.
Do. waist.
Circumference of breast.
Do. to hand.
Length of sleeve to elbow.
Falling in at waist.
Falling in at top back.
Length waist.
From top shoulder to B line 3.
Arm.
Across waist.
Across breast.
Neck.
Across waist.
Under the arm.
Neck.

INTRODUCTION TO THE TRADE.

In introducing to the trade the following system of cutting, I need not follow the principle adopted by a rival and the confiscator of my system; make known the place of my nativity, or whether I was the recipient of a common schoolastic education, or graduated with all the honors of Harvard University. Permit me simply to state that I am a practical tailor and the acknowledged author of the within work, and if it possess any merit worthy of the trade, I solicit only the trades acknowledgment for the same. I would not have made mention of the above, had not J. B. West, in the first edition of his work, called attention to the fact that he had been educated for a profession—an unknown question for futurity to solve. In his second issue he states that at an early age he was apprenticed to a “knight of the shears,” from whose apparent high, qualified attainments, the young man of extraordinary geometrical and anatomical qualifications, finally arrive at the conclusion that Webster, No. 2, had been born. He therefore conceived the awful idea of being the author of a work, no doubt finding intellect scarce, and yet being determined to rank among authors, he unfortunately happened to see my system of cutting, which he appropriated to his own use. I therefore assume the privilege of quoting from his work such pages as may seem interesting to the trade.

Practical cutters and tailors will readily admit the correctness of the following quotations from West's edition, published in 1862, page 4. Systems were like snap watches, they were made to sell, and if they sold they were good enough. They were easily made; almost any one could make them. If a man could have found ready sale for them, he ought to have done well making them for two shillings each. They run sometimes on division systems, but that got played-out. It was only a sum in simple division and almost any school boy could understand that.

Then some enterprising fellow found out that a tape string could be

drawn around the human body in almost any direction. He was the father of all inventions; he called that actual measurement. Then another man found out that a strap could be buckled around the body, under the arms, with a button in front of the scye, and that a tape measure would reach from the button to almost any part of the body. He made a wonderful discovery. One man discovered that he could take a measure from the front of the scye to the centre of the back, and another made the wonderful discovery that he could measure from the centre of the back to the front of the scye. That was one of the greatest discoveries in the world. Another discovered that he could measure from the center of the back around the shoulder and back to the place he started from. He was the only man then living." Same page, West says:

"In a few years inventors of tailor's measures had almost all disappeared. The one hundred and fifty-two patent systems were turned loose to the mercies of the people. If a man wanted to pay for the privilege of drawing a tape-string around the body in any direction, he could not find the patented without considerable trouble. In the mean time, the American people excelled all nations on the globe for useful improvements, but where was the man that had made any improvements on tailor's measures. "Echo answers where?" Now that echo rebounds and answers the questions, where that man could be found at the time when West alleges he was laboring to complete his rule.

The fact is, my system of geometrical cutting has been known and practiced by many of the most scientific cutters in the United States, since 1843, and for the past twenty years I have been engaged, whenever required, teaching the rule in the city of Chicago.

In the former edition of my work, I made mention of the fact that the same principle as applied to obtain the outlines of the human body applied equally towards the drafting of a ship, or any other branch of mechanism. But Mr. West, in his book, refers to having been convinced of the correctness of his system by its application to the solar system. From my limited knowledge of the solar system, I am at a loss to know what application could be made of the sun, moon, stars or motions of the earth, towards the fitting of the human form.

In conclusion permit me to solicit from the trade a careful examination of the within pages. Cast aside all prejudice in favor of other systems until you have given this an unprejudiced examination. The author feels assured that this system admits of no improvement; it being based upon mathematical principles which never err.

THE AUTHOR.

Annexed is a copy of the published correspondence between the author and West.

CHICAGO, March 21, 1863.

EDITORS TIMES—GENTLEMEN:—

“In your issue of the 19th inst. I inserted a notice addressed to J. B. West, whose system of cutting is the same, in all material points, as I have been teaching since 1843. In that notice I requested Mr. West to compare rules before a committee of tailors. He has failed to comply with my request, and I, therefore, publish the following correspondence, also, the certificate of an old and experienced cutter in this city, who happened to be present at the conversation between Capt. Lynch, my attorney, and Mr. West.

CERTIFICATE.

This is to certify that having called in at Mr. Tittsworth's store, Friday afternoon, I accidentally heard a parley between Mr. West and Mr. Taylor's attorney, Mr. Lynch. Mr. Lynch's object was, I ascertained, to request Mr. West to meet Mr. Taylor to test the material points of difference in their rules. The attorney, at the same time, said he was authorized by Mr. Taylor, to invite him to appear before a committee of cutters appointed by the tailors society, to test the variance between the two rules. He also stated that in case Mr. West was the author of the rule which he was now teaching in this city, that he, Mr. T., would pay Mr. West one hundred dollars, provided, he was the first originator of the rule, and in case he, Mr. West, failed to do so, that he, Mr. West should pay to Mr. T., the one hundred dollars, which should be appropriated to the benefit of the indigent widows and orphans of deceased tailors.

I hereby certify the above to be correct in every particular.

H. PRICE GRAVES.

J. B. WEST, Esq.—

SIR:—I caused to be inserted in the *Chicago Daily Times*, of the 19th inst., a notice for your benefit. In that communication I stated that the system of cutting which you represent yourself to be the author of, combines all the material points contained in my system, and which I have been teaching ever since 1843. If you, without a knowledge of my rule, framed our present system, it is so much the more creditable to yourself. If, however, you were governed by mine, I should think it your duty, at least, to acknowledge the same. I should, indeed, be pleased to meet you before a committee to be selected by cutters or tailors of Chicago, so that a comparison of rules may be made.

Respectfully,

F. H. TAYLOR,
257 Madison Street, Chicago.

Mr. West having been visited by my attorney, also having received a letter from me, has, up to this time, failed to meet me or acknowledge my former communications. I therefore renew my challenge, and unless accepted by Mr. West, will publish him throughout the country as an imposter.

F. H. TAYLOR,
257 Madison Street, Chicago.

To the president of the journeymen tailor's society, Chicago :

SIR:—Enclosed I forward you a copy of the correspondence addressed to J. B. West, with reference to the system of cutting which he is now teaching in Chicago. You will confer a favor by introducing the matter to your society, and in case I fail to establish my claim to the authorship of the Geometrical System of Cutting, I will, provided Mr. West will assent to a comparison of rules, forfeit to your society for the benefit of indigent widows and orphans of deceased tailors, the sum of one hundred dollars. Mr. West, in case of failure on his part, to do likewise.

Provided the society are so disposed, I am willing, at any time, to appear and demonstrate my system.

Respectfully your ob't servant, &c.,

F. H. TAYLOR,
Garden City House, No. 257 Madison Street, Chicago.

DIRECTIONS FOR COAT MEASURING.

For ascertaining the outlines of the body,

1. Place the square on the neck, (back view;) the height wanted; the two short arms, resting on the shoulders, and measure diameter, as exemplified on plate 1, fig. 1.

2d. Place the two short arms of the square underneath the arms, your customer placing his hands upon his hips until you have the square properly fixed, then he dropping his arms, you take the measure as seen in plate 1, fig. 2.

3d. Move the square down to waist; press the same to hips, and measure, See plate 1, fig. 3.

4th. Next place the short arm on the mark across the back, over shoulder blade, the sliding arm in front, and measure. See plate 1, fig. 4.

5th. Turn the square over the shoulder, one short arm resting on top, the other underneath the arm, the square turned upwards. See plate 1, fig. 5.

6th. Finally, place the square, the small arms drawn together. Take the square between the thumb and finger of right hand, two and one-half inches from the angle, and place the square on the point where the neck measure was taken, letting the square hang perpendicular, touching at the shoulder blade. First note the falling in at top, then call off the number where the line B, across the back, intersects the square, continue down to

the mark at waist, and call off figure. Now place your right hand in hollow of the back, at waist, pressing full against the body, turning your fingers upwards till they touch the square. See plate 1, fig. 6.

DIRECTIONS FOR DRAFTING A COAT.

Place the square within four inches of the top of cloth, draw B, line 1, across top. Also draw from B line 1, down to B line 4, mark at top, on B, line 1, the half-width of back, say two and one-half inches; move the square down to B line 3, draw line across, and mark one-half width of shoulder blade, say six inches, move the square down to B, line 4, the natural length of the waist, say sixteen inches, draw a line across, and mark one-half width of back, say five inches, next remove the square to B, line 1, the small arm extending towards front of breast, the square passing through shoulder blade, measure on B, line 3, the square extending to B, line 4; draw a straight line from B, line 1, to B, line 4. This line is known as C, line 4. Before removing the square mark the falling in of top back, say two and a-half inches, place the square, the vortex resting upon the mark for falling in at top-back, the small arm of the square extending towards front of breast, the square passing through the junction of C, line 4, with B, line 3; draw a line from falling in at back top, down to the junction of C, line 4, with B, line 3; also, draw a line across the small arm of the square, to front of breast, which line is marked C, line 5. Measure upon C, line 5, the size of the neck, which will be one-half an inch less than the whole top of back measure, say four and one-half inches. Next place your fingers upon the square at the junction of C, line 4, with the line drawn in at top neck, which junction is known as letter A, then bring the square to back seam, at B, line 3, ascertain the difference between the above described line, and the measure from B, line 3, to back top, adding the difference to the top of back. Also, add a seam to the same. Next remove the square across B, line 3, over to C, line 4, and measure upward upon C, line 4, the diameter of the arm, say five and a-half inches; draw a line across the top, next divide the diameter upon C, line 4, into two equal parts, move the square to the half-diameter of the arm, and mark across; move the square forward to the angle line in front, and from thence mark the diameter of the arm; divide the diameter into two equal parts, place the square upon the centre of diameter and draw a line down to B, line 3; next bring down the square, placing the vortex at the junction of C, line 4, with B, line 3, and mark diameter of the breast, say nine and one-half inches. Finally, bring the square down to B, line 4, at its junction with C, line 4, and mark upon B, line 3, from said junction, the falling in at waist.

1st. To ascertain the difference between the round of the body and the square of the same. Measure the distance from the angle of the square to the body, noting down where the square comes in contact with both arms of the same; take off one-half inch say on fore part, also, on back upon B, line 3, both measures to be taken off from C, line 4. Deduct also, one inch from back and forepart at waist.

Having formed the exact shape of body you proceed to

DRAFT THE COAT.

Mark on line C, 1, from top of back, the length of waist, say twenty inches, mark the width of back you require on B, line $2\frac{1}{2}$, which is centre of scye, mark above and below the width of back scye required, then shape back according to fashion or fancy. Cast a sweep from b to c by a; cast a sweep from d to e, by a; cast a sweep from f to g, by a; measure the distance from d to h, and mark the same from e to i; draw a line from c to i, from k is half the distance between c and i; add a seam forward at k; mark one inch forward at i to P, to form gorge. One inch also, above c. Having formed your fashionable back from your natural shape, you cast a sweep from m to o, by n, you then ascertain the distance from n to m, and mark the same from p to r. Cast a sweep from r to s, by p. You then ascertain the distance from m to o, and mark the same from r to s, on sweep. You now form your shoulder seam, allowing a seam at gorge p. For falling in at waist on line B, 4, take off from z to v, and from u to w, the difference between a round and square body, say one inch, get the distance from v to w, and mark the same from x to y, on B, line 4. Adopt the same principle at junction of line B 3, and line c, 4; from bottom of back scye, mark forward one-fourth inch, on the same principle, you now form the shape of your side seam. Sweep for the length of your side seam, from a a to b b; form your scye as represented in draft; place your back in a closing position, and mark from back seam at line B, 3, to front of breast, c c, two and a-half inches more than breast measures. Finish as represented in diagram No. 2, plate 4.

SLEEVE.

Draw line A, square line B, by A, mark down $1\frac{1}{2}$ inches at C, from C to D; length to elbow less width of back; continue measure to E, length of sleeve; sweep from C to F, by D, from C to F, diameter of arm, one-third added. Draw line from C to F, mark at G, one-half distance from C. Draw line from D to G; from G to H, is half the distance of arm. Next describe a circle by G through H and L. Cast a sweep for sleeve-head, from C to F, by H, through L. Draw a parallel to line A, from F to K, and finish as represented on plate No. 3.

VEST.

The vest is drafted same as coat, with exception of one inch less than the diameter of the neck, (back view;) at two inches at top of back, on line C, 1, and two inches on line C 4, and add to front of breast 2 inches. At waist take out two inches less than for coat.

DIRECTIONS FOR PANTALOOON MEASURING.

First place the top arm of the square in the crotch and measure upwards to the highth required, say eleven inches; before removing the square, note where it comes in contact with the body, say four inches. Next place the square on said mark and measure diameter from hip to hip, say thirteen inches. Then place the top arm of the square on same mark, and measure diameter from front to rear, say nine and a-half inches. Now measure leg where it joins with the body, say six inches. Place the small arm of square full up in crotch, the long arm downwards, and move the sliding arm of the square to the floor, and note where the top strikes the figure on the fixed arm of the square.

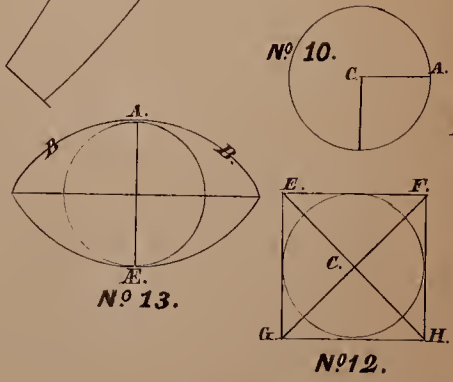
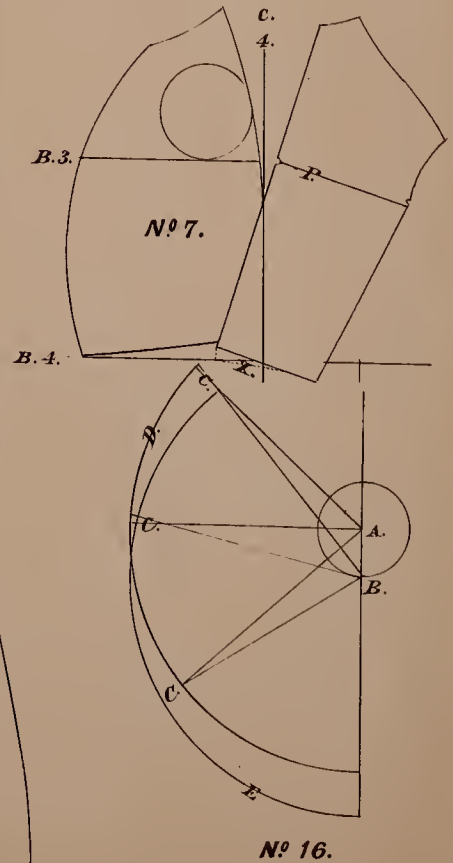
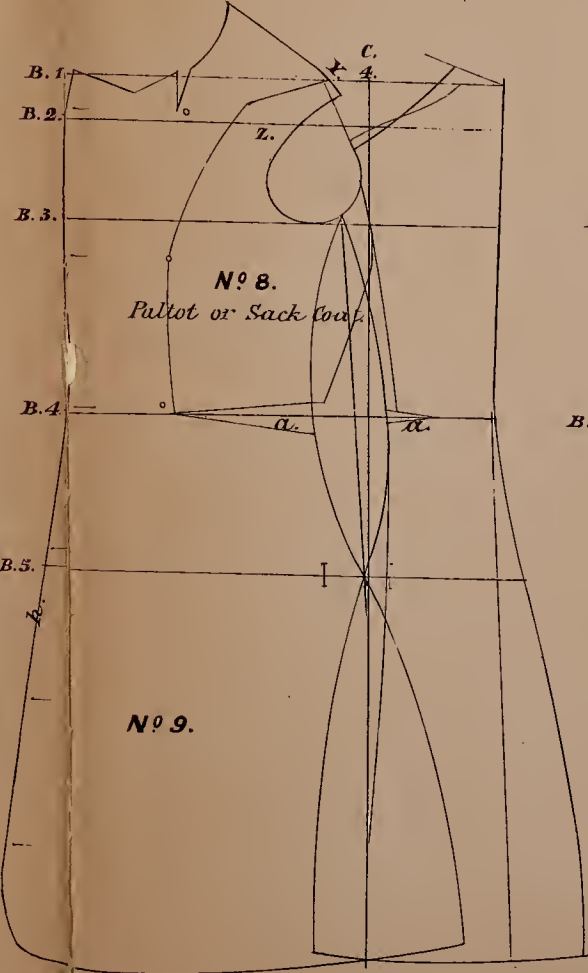
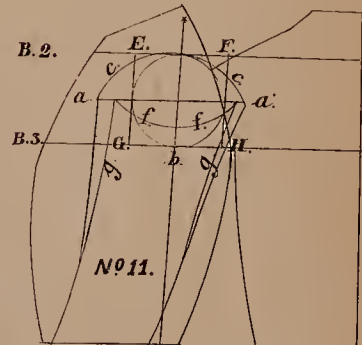
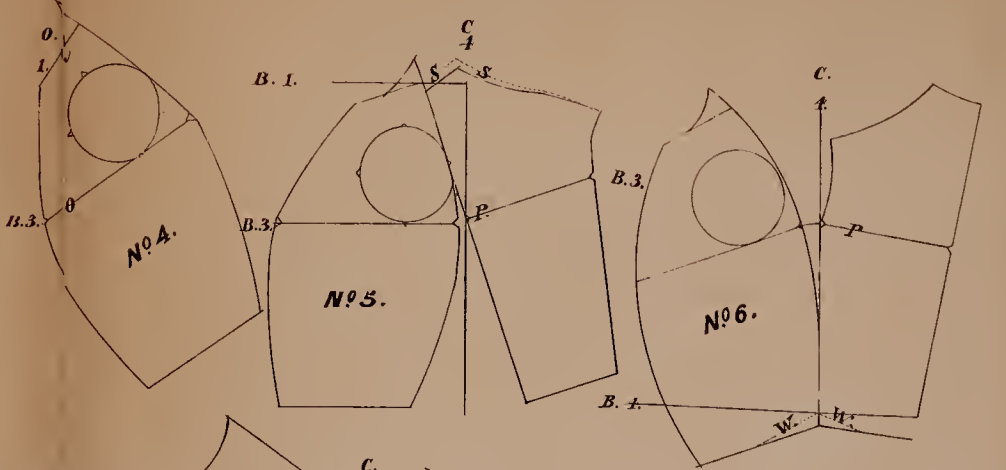
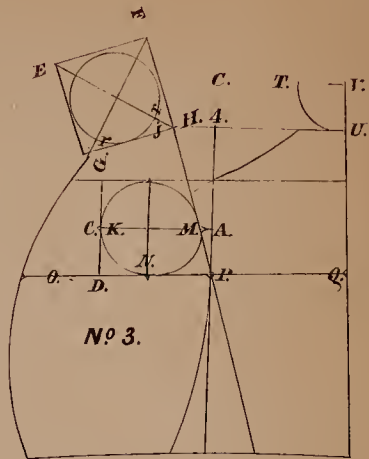
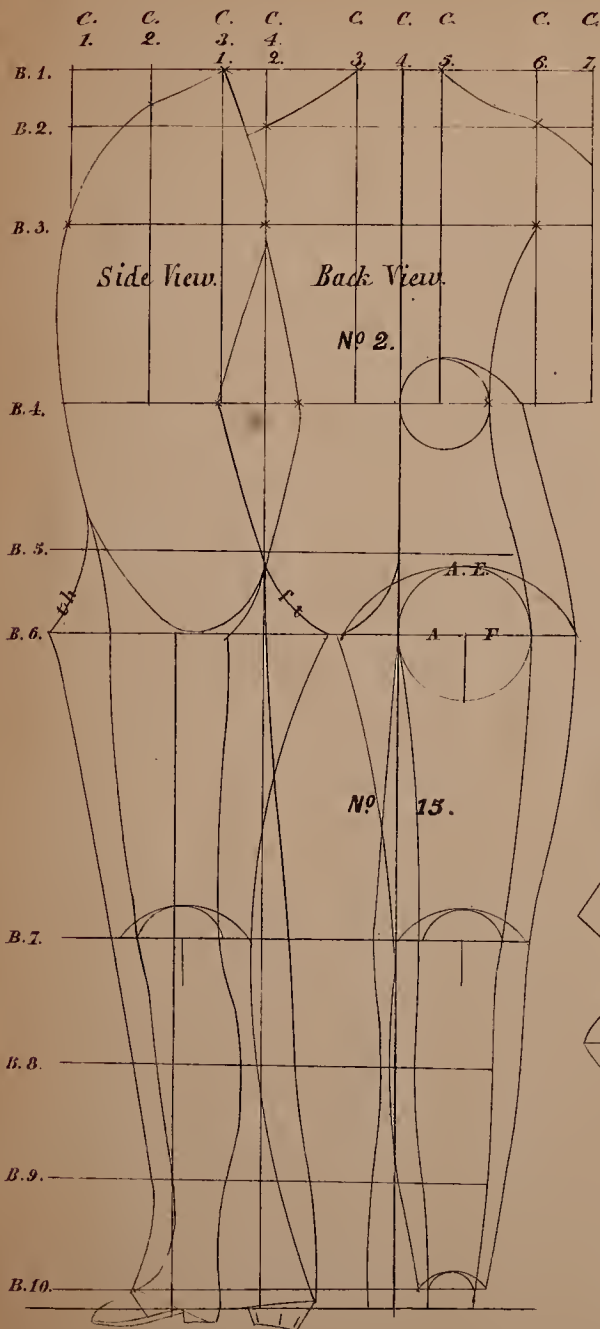
FOR DRAFTING PANTALOONS.**UPPER SIDES.**

Mark from O to B, the highth of pants from crotch; from B to A, one-fourth the diameter of the thigh; from A to D, the diameter of the leg; C is half the diamter; mark from C to J, the length of leg. From edge of cloth to K, is the size you want the top side of your pants at instep; at J, is half the measure across. Draw a line from J, through C, to top of pants; square C to B, and C to F, by centre line, C to I, and C to G, is the same as c to a, and c to D; cast a circle by c through G, D, I and A, square line up from a to H. D to H, is the highth of pants, H to O, is fourth of waist, D to H, is largest part of hips, six inches up; cast a sweep by G, from I to E, and I to F.

UNDER SIDES.

First measure from 2 to 3, at instep, the size required at bottom; get half the distance from 2 to 3, at 4; place the centre line of the upper parts three-fourths of an inch forward of 4, B to 5 is one inch more or less, accor-





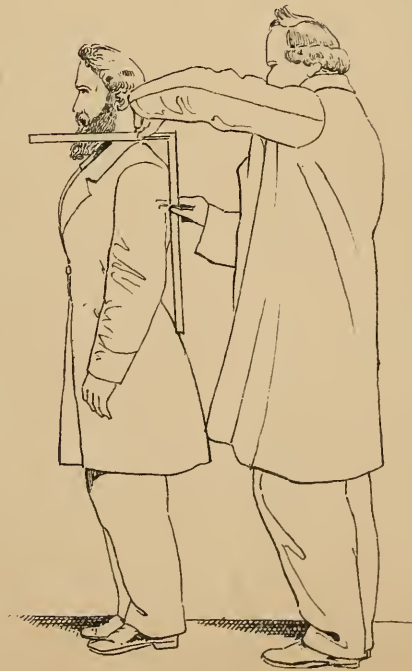
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No. 9.

No. 16.



No 3.



No 6.





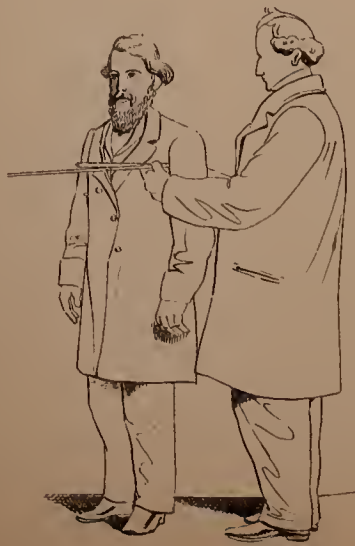
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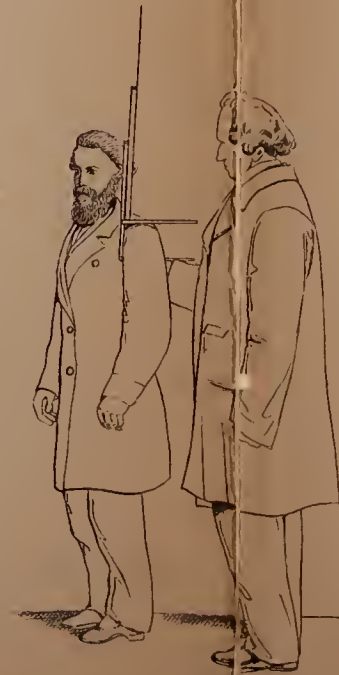
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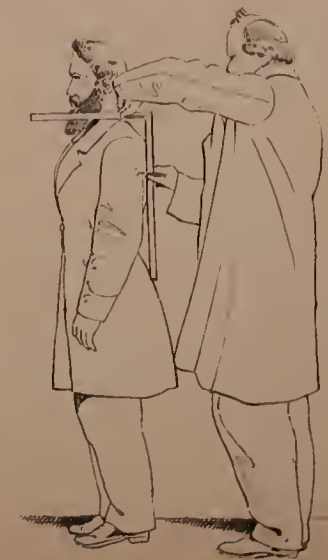
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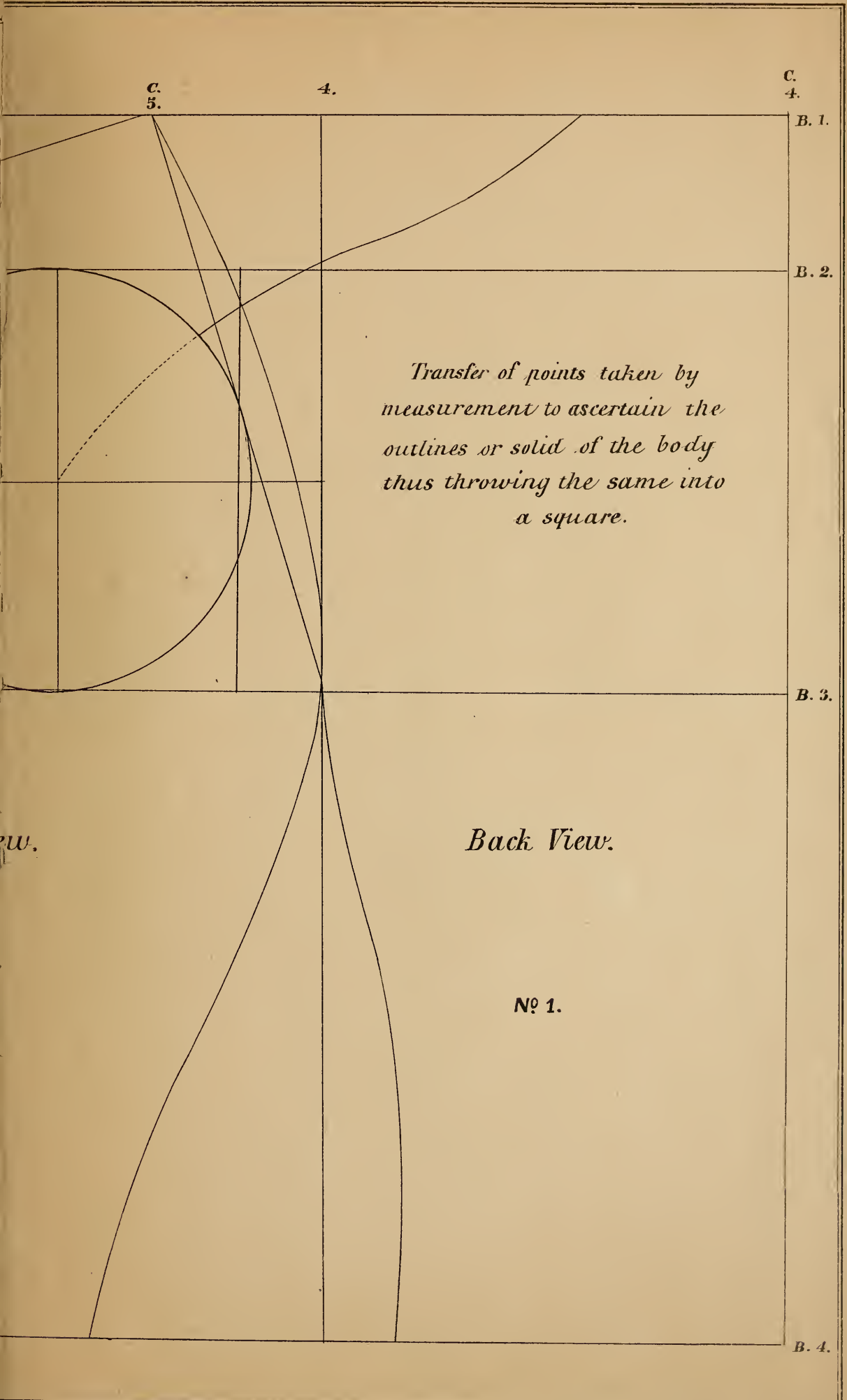


No 5.



No 6.





C.
5.

4.

C.
4.

B. 1.

B. 2.

B. 3.

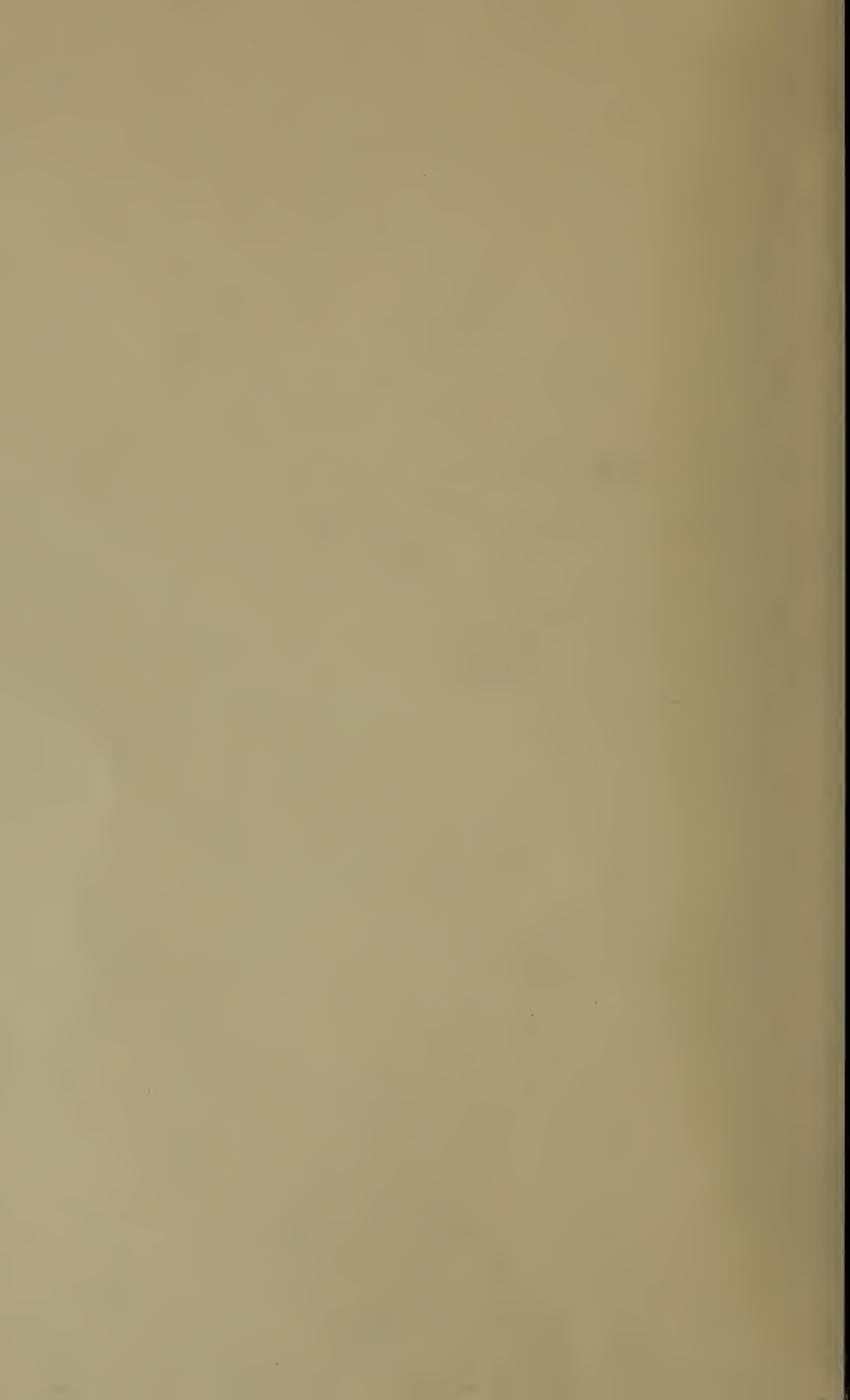
B. 4.

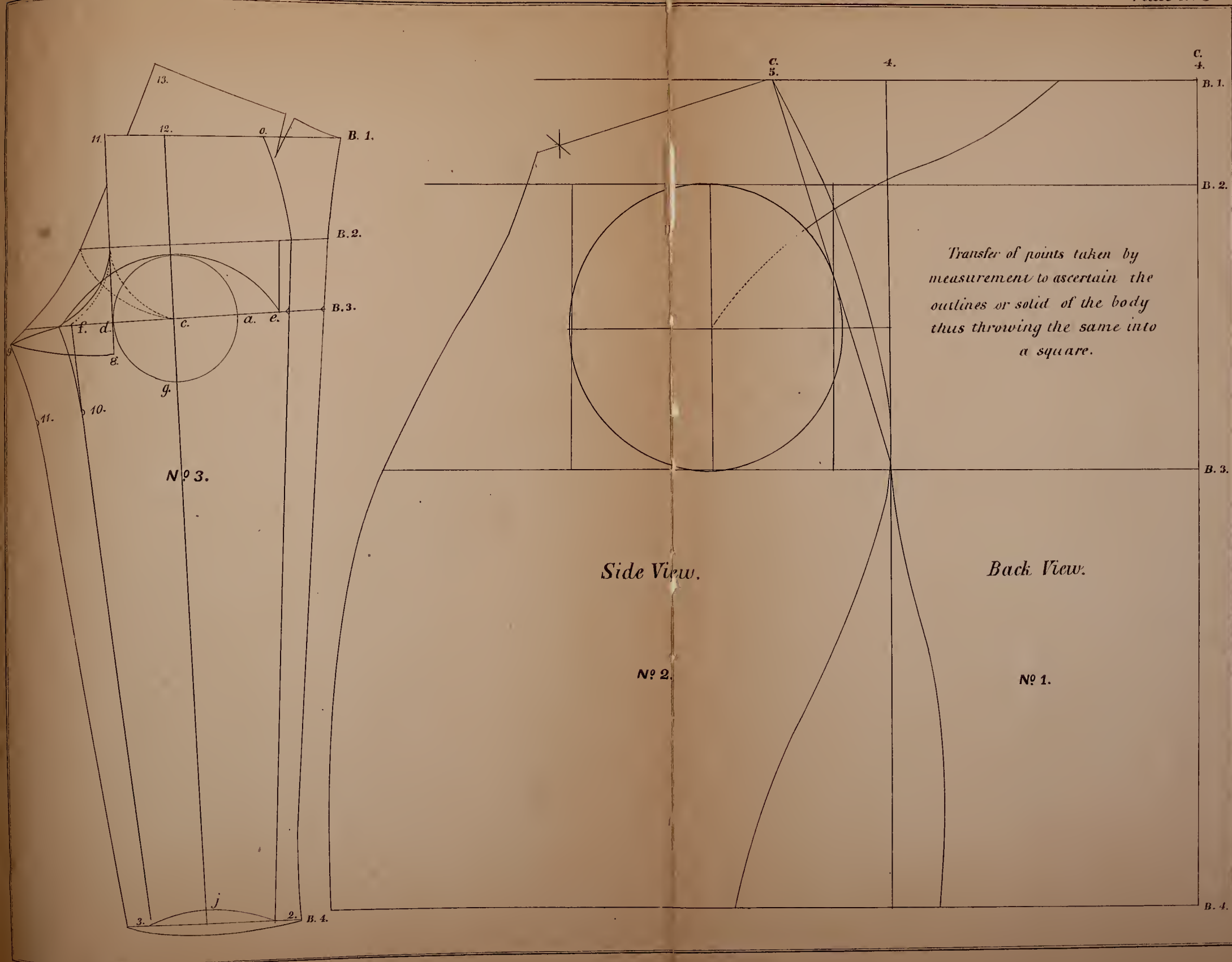
*Transfer of points taken by
measurement to ascertain the
outlines or solid of the body
thus throwing the same into
a square.*

Back View.

N^o 1.

rw.





*Transfer of points taken by
measurement to ascertain the
outlines or solid of the body
thus throwing the same into
a square.*

Side View.

Back View.

N^o 3.

N^o 2.

N^o 1.

B. 1.

B. 2.

B. 3.

B. 4.

C.
4.

C.
5.

4.

B. 1.

B. 2.

B. 3.

B. 4.

13.

12.

11.

a.

c.

a.

e.

g.

N^o 3.

11.

10.

f.

d.

g.

j.

3.

2.

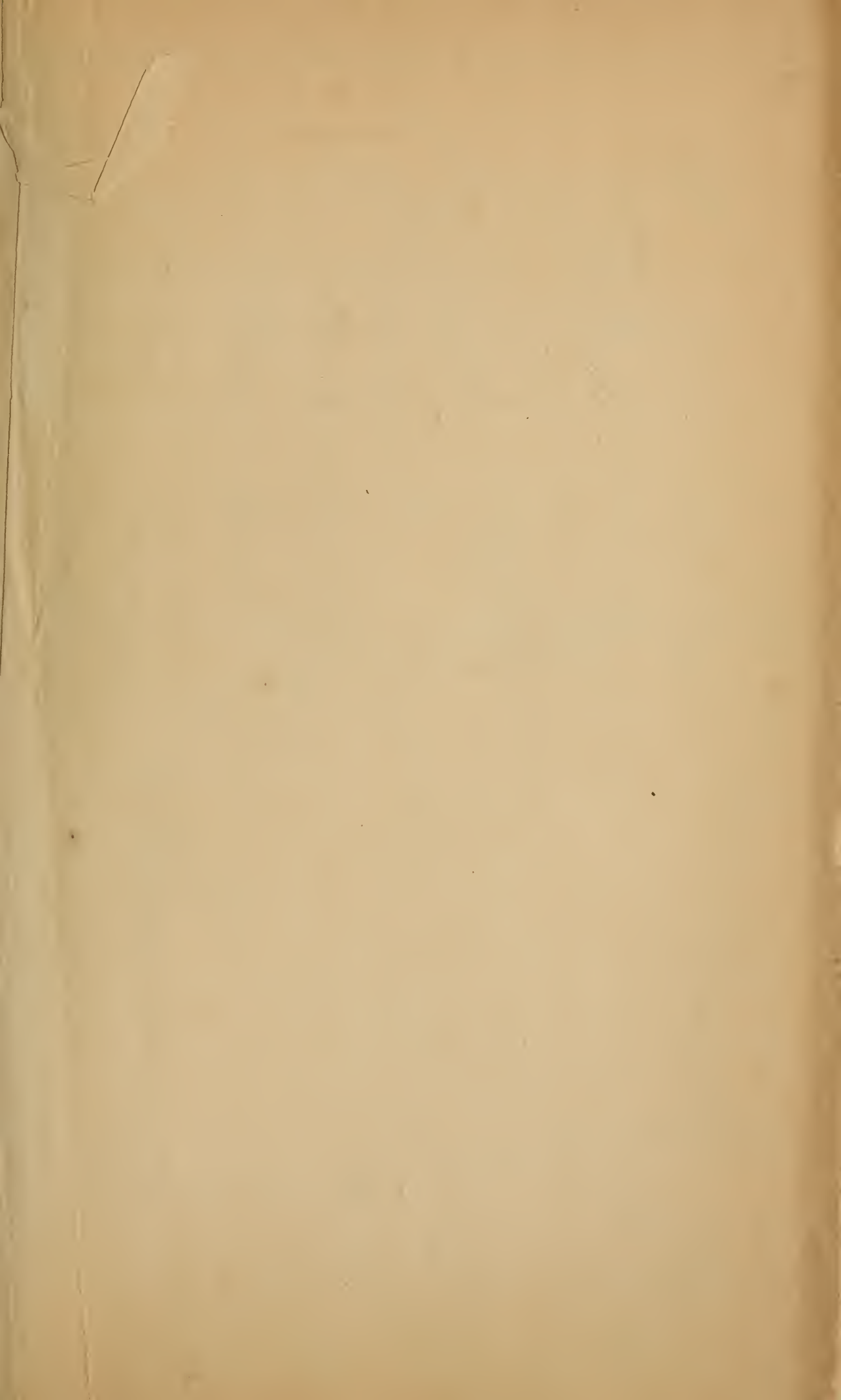
3.

2.

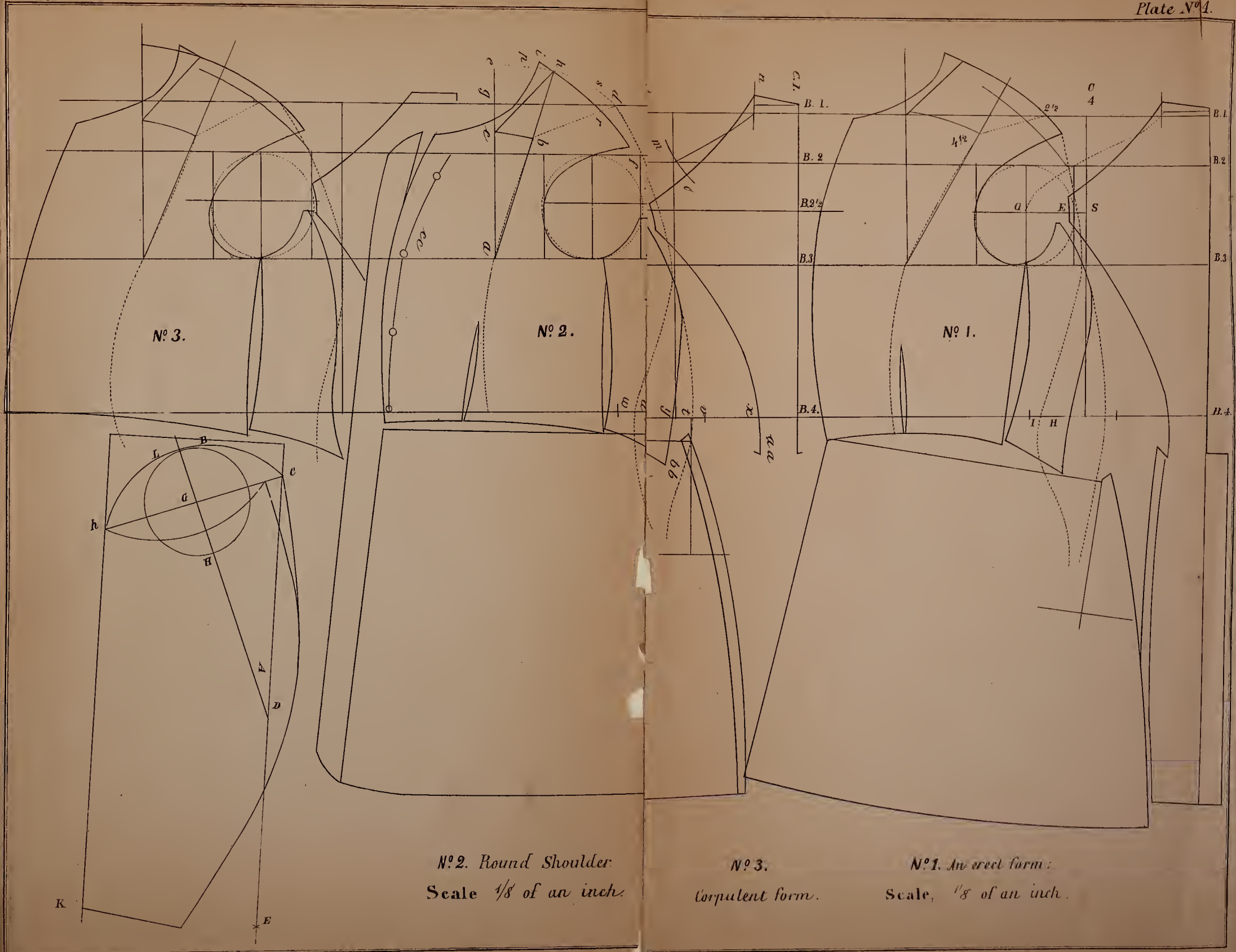
B. 4.

B. 4.









N^o 3.

N^o 2.

N^o 1.

N^o 2. Round Shoulder.
Scale 1/8 of an inch.

N^o 3.
Corpulent form.

N^o 1. An erect form.
Scale, 1/8 of an inch.



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