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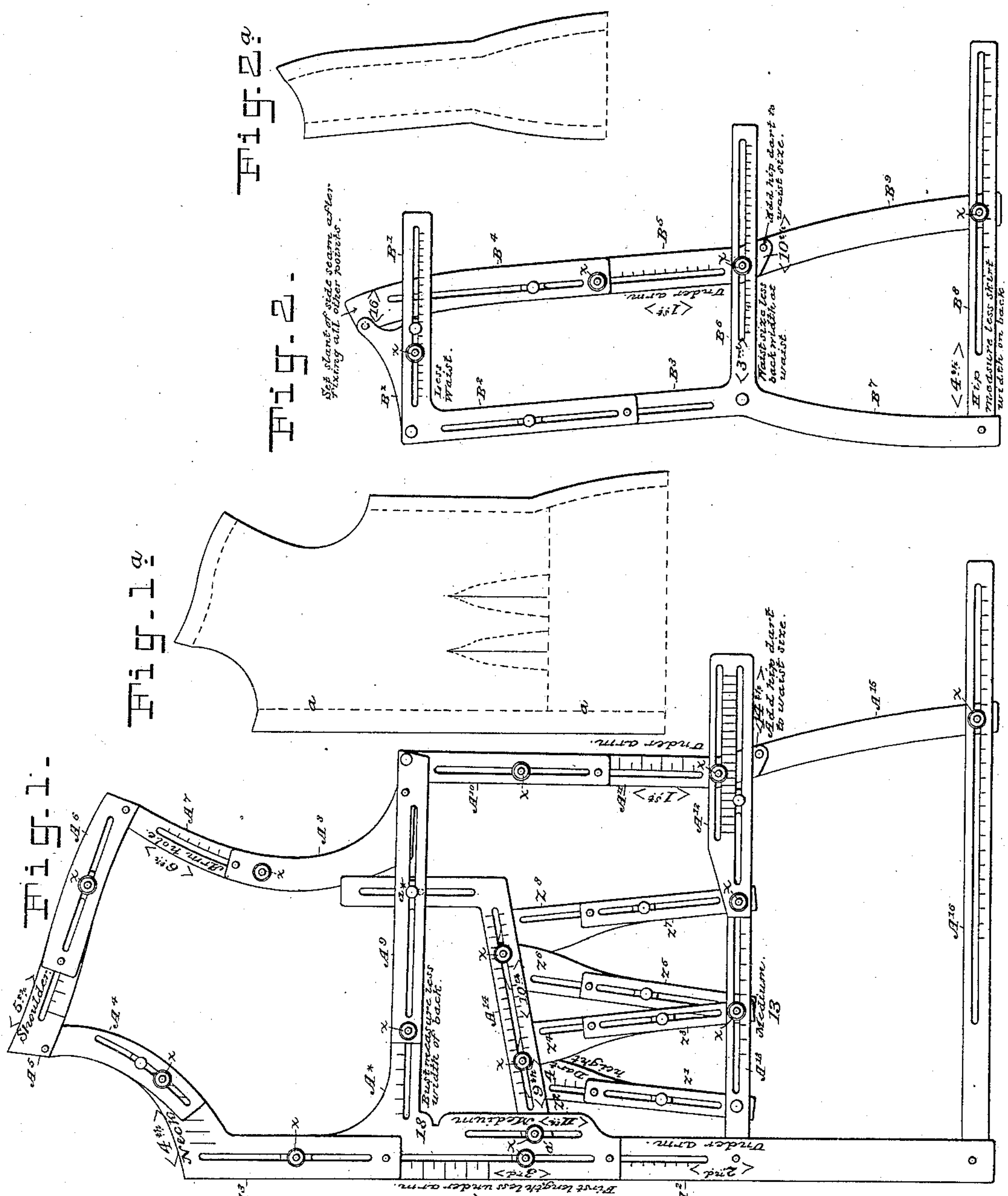
A. McDOWELL.

ADJUSTABLE PATTERN FOR DRAFTING GARMENTS.

No. 342,216. Patented May 18, 1886.



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ADJUSTABLE PATTERN FOR DRAFTING GARMENTS.

No. 342,216. Patented May 18, 1886.

Fig. 4.

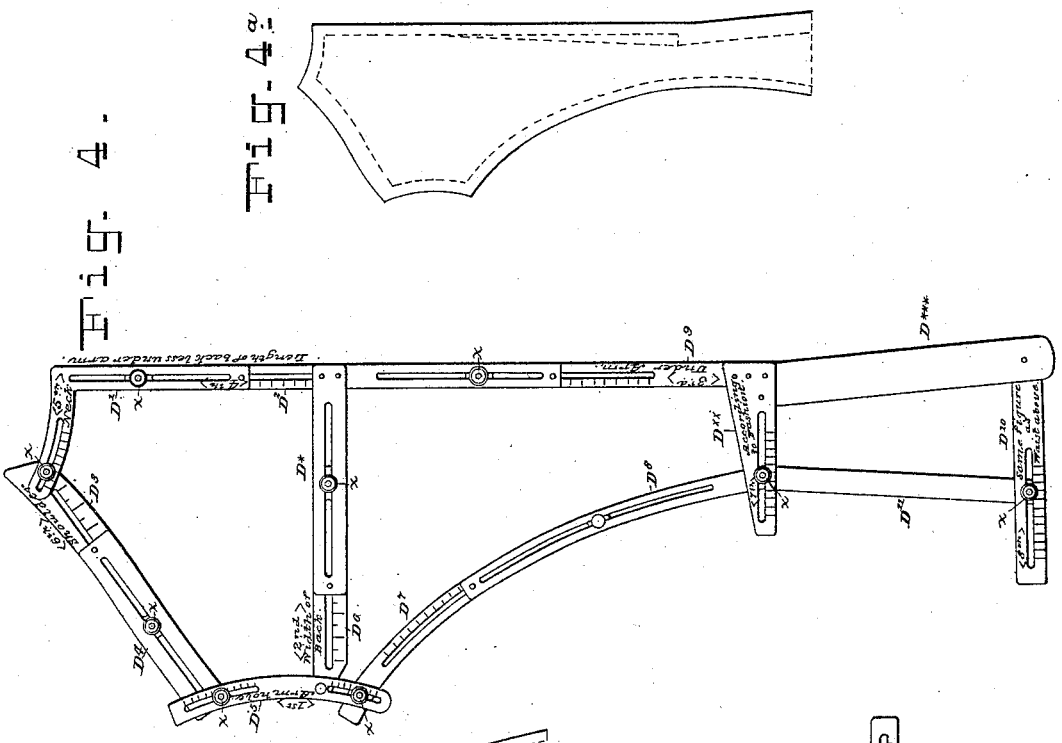

Fig. 4a.

Fig. 5.

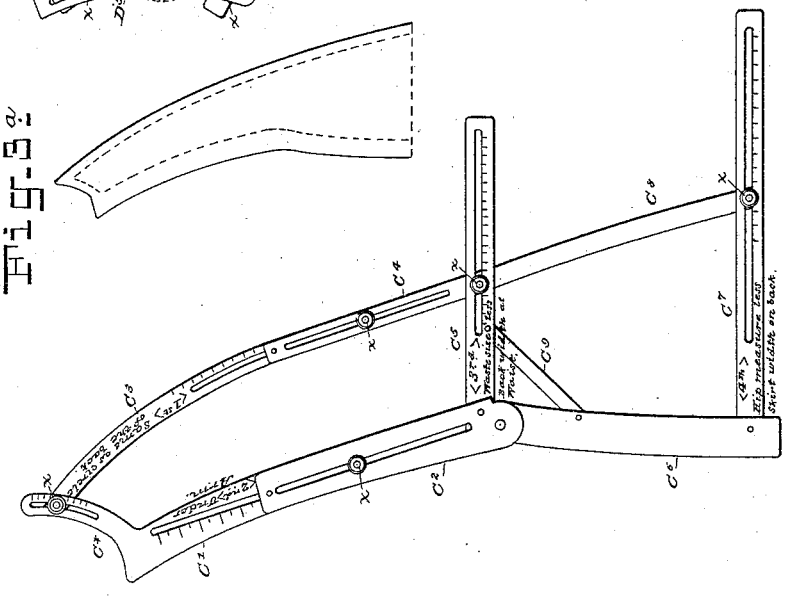

Fig. 5a.

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ADJUSTABLE PATTERN FOR DRAFTING GARMENTS.

No. 342,216. Patented May 18, 1886.

Fig. 5.

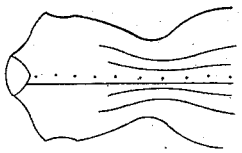


Fig. 6.

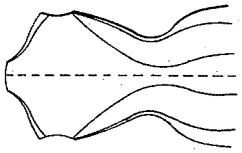


Fig. 7a.

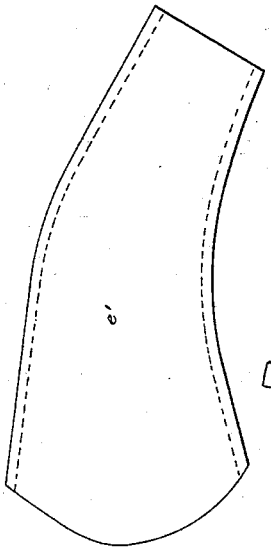


Fig. 7.

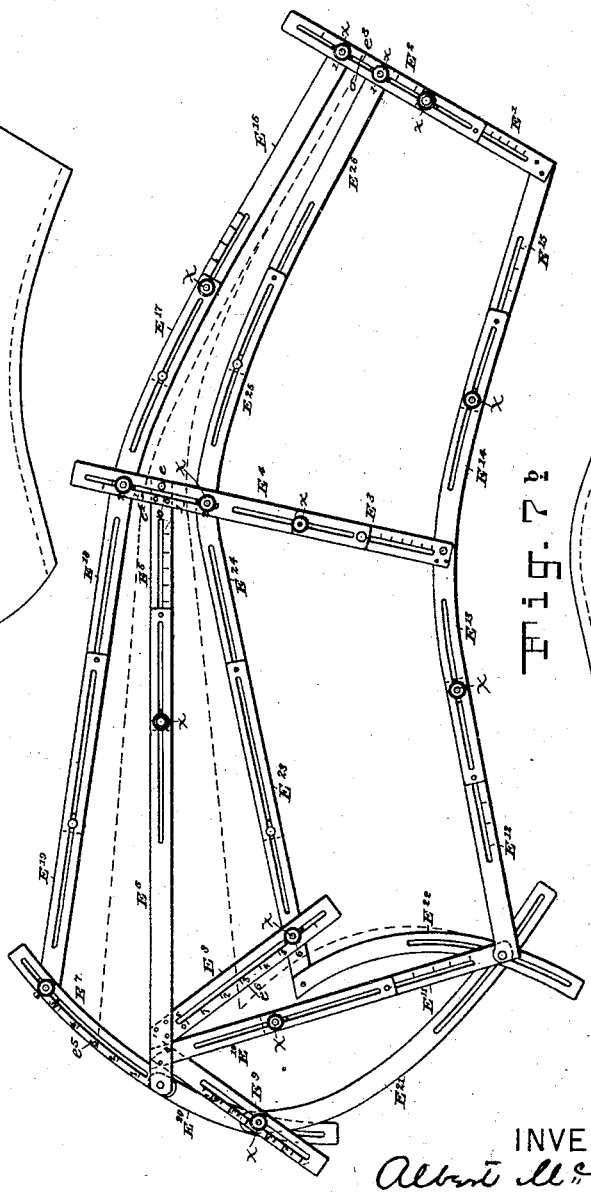
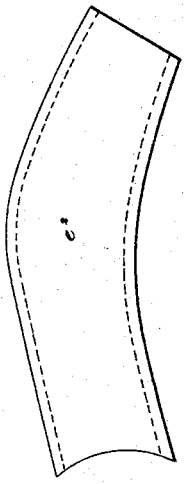


Fig. 7b.



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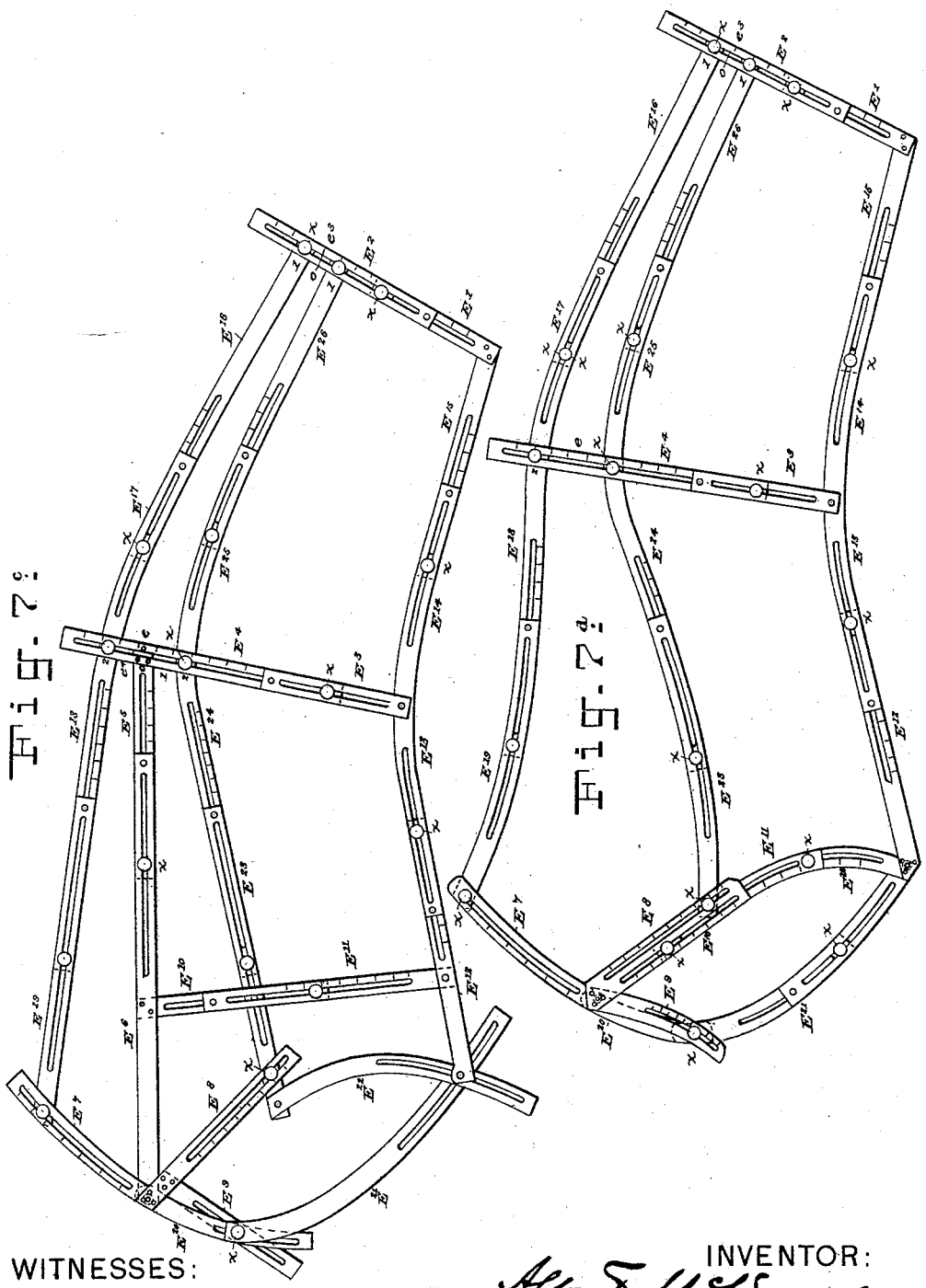

Fig. 7c.

Fig. 7d.

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UNITED STATES PATENT OFFICE.

ALBERT McDOWELL, OF NEW YORK, N. Y.

ADJUSTABLE PATTERN FOR DRAFTING GARMENTS.

SPECIFICATION forming part of Letters Patent No. 342,216, dated May 18, 1886.

Application filed July 30, 1885. Serial No. 173,117. (No model.)

To all whom it may concern:

Be it known that I, ALBERT McDOWELL, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Adjustable Patterns for Drafting Garments, of which the following is a specification.

My invention relates to that class of patterns which are made of parts adjustably connected together, whereby the pattern may be set or adjusted to the measures taken and the parts then clamped together. When so set, the material or paper patterns may be outlined or marked by following the outlines of the adjustable pattern.

In order to facilitate the setting of the pattern to the measures, and to avoid, as far as possible, any reliance on the judgment of the operator in making allowances, &c., such patterns are usually provided with scales whereby the parts may be adjusted to the measures taken. A pattern of this general character, and especially designed for cutting out the upper parts of ladies' dresses is shown in my Patent No. 310,297, of January 6, 1885. My present invention is an improvement thereon.

The objects of my present invention are, in general, to provide for a better adjustment of the parts of the pattern; to remove non-essential and extraneous parts which only add to the weight and cumbersome character of the pattern; to provide a parallel motion or adjustment for the darts, whereby whatever may be the length or width of the darts the same relative proportions as to length will be maintained; also, to avoid the complexity and waste of material incident to the formation of the hip-dart, which I now accomplish by making a separate pattern for the under-arm piece, thus making a four-part pattern for the body or waist of the dress or other garment. I also provide a more perfect adjustment between the curves of the side body and those of the back or back body, and have made changes in the side-body pattern, whereby I am enabled to place the material for the skirt just at the point needed to suit changes of fashion. I also add a pattern for the sleeve, the novel characteristics of which will be hereinafter fully set forth.

In the drawings which serve to illustrate my invention, Figure 1 represents the pattern for the front of the body; and Fig. 2 represents the pattern for the under-arm piece, now constructed separate from the front pattern. Fig. 3 represents the pattern for the side body, and Fig. 4 the pattern for the back of the body. Each of these represents one half, and when applied to folded material serves to determine the contour of the two corresponding pieces of the fabric. All the views are face views and show the parts of the patterns set to correspond with each other and to a predetermined measure. Figs. 1^a, 2^a, 3^a, and 4^a represent, respectively, pieces of fabric cut from the pattern shown in Figs. 1, 2, 3, and 4, but on a reduced scale, for economy of space. Figs. 5 and 6 represent the dress-body made up from these pieces, Fig. 5 being a front view and Fig. 6 a back view. Fig. 7 represents the adjustable pattern for the sleeve, the view being a face view, and on the same scale as Figs. 1, 2, 3, and 4. Figs. 7^a and 7^b represent the wide and narrow parts of the sleeve cut from this pattern, but on a reduced scale for economy of space. Figs. 7^c and 7^d illustrate modified constructions of the sleeve-pattern, which will be hereinafter described.

My pattern is usually made from sheet metal, but other materials may be employed. Those plates forming the outline where seams are required are of the proper width to allow for the seam; therefore the outer margin, generally speaking, marks the cutting-line and the inner margin the seam or sewing line.

The parts are connected together in three ways—namely, by rivets or integrally, which, for convenience, I will characterize by the words "rigidly connected," by a hinge rivet or stud to form a joint or articulation, which I will characterize as "hinged," and by slots and rivets or screws, so that the plates are at liberty to slide on each other for purposes of adjustment, which I will characterize by the single word "connected."

Referring to Fig. 1, plates A′ and A* are rigidly connected, the latter standing at right angles to the former. Plate A^2 is connected to A′ below, and plate A^3 to A′ above. The outer edges of plates A′, A^2, and A^3 form the front line of the pattern, usually about one

and one-half inch from the edge of the fabric, as indicated by the dotted line *a* in Fig. 1ª. This line may be curved outwardly, if desired; but this slight curvature will usually be allowed by the operator. In my present invention I omit the outer plates for determining the distance the pattern is to be set from the edge of the material as cumbersome and unnecessary. Plate A^3 is connected to A^4, and forms with the latter a part of the neck-curve. A^5 is hinged to A^4 and A^6 is connected to A^5, the two forming the shape of the shoulder. A^7 is hinged to A^6 and connected to A^8, the two forming part of the arm-hole. A^8 is usually hinged to A^9, which is connected to A*, the branch from A'. A* and A^9 give the width of the front, and are usually provided with a scale, as shown. A^{10} is hinged to A^9 and connected to A^{11}. A^{10} and A^{11} form the pattern for the under-arm seam. These are usually provided with a scale. A^{12} is adjustably hinged to A^{11} and connected to A^{13}. A^{12} and A^{13} form the waist-line, and A^{12} is usually provided with scales, as shown. In order to furnish a pattern for the upper or hip portion of the skirt, I usually add the parts A^{15} and A^{16}. Plate A^{15} is hinged to A^{11}, and adjustably hinged to A^{16} at its lower end and to A^{12} at its upper end. A^{16} is hinged to the downward prolongation of A^2. I do not consider this skirt portion an essential part of my pattern. A^{14} is an L-shaped plate connected at *a'* to A' and at *a** to A*. Its longer transverse branch stands at a fixed angle with plates A' and A*, and it has an adjustment up and down parallel to A'. Z are the dart-plates. In themselves they present no novelty over the dart plates shown in my former patent. Z', Z^2, Z^3, and Z^4 form the first dart. Z^5, Z^6, Z^7, and Z^8 form the second dart. These plates are connected to A^{14} at the top and to A^{13} at the bottom. The adjustment of the plate A^{14} up or down varies the lengths of the darts, but the difference in their lengths remains always the same. On A^{13}, I usually place a dart-scale, as shown.

The method of using the front body portion is so similar to that described in my former patent that a detailed description further than given above will not be required.

Referring to the under-arm pattern, Fig. 2, plate B' is rigidly connected to B^2. B* is connected to B' and hinged to B^4. B^4 is connected to B^5, and B^5 is adjustably connected to B^6. B^6 is rigidly connected to B^3, which latter is connected to B^2. B' and B^5 are usually provided with scales, as shown. B^7 is generally rigidly connected to B^8 and B^6. The plates B^3, B^6, and B^7 when so connected may as well be integral, except for economy of construction. B^8 is hinged to B^7 and is connected to B^9. B^9 is hinged to B^5. B^7, B^8, and B^9 form the pattern for the skirt portion. When this under-arm pattern is laid on the fabric, the operator marks both the inner and outer edges of the plates B^2, B^3, and B^7, the outer being the cutting-line and the inner the sewing-line of the under-arm seam. He marks both the inner and outer edges of plates B^4, B^5, and B^9, to indicate the cutting and sewing lines of the side seam which joins the under arm piece to the side body. The outer margins of B' and B* form part of the armhole-curve, and the lower edge of B^6 the waist-line. It will be understood that those edges of the pieces cut by the plates A^{10}, A^{11}, and A^{15} in Fig. 1 and B^2, B^3, and B^7 in Fig. 2 are joined together in making the garment, and the hip-dart is thus formed. Where the skirt is abbreviated, as in a basque or sack, the under-arm piece may be cut independently of the front and with considerable economy. In cutting this piece the plate B^6 is laid properly with the grain or figure of the fabric. In this pattern for the under-arm piece I have shown the plates B*, B^4, B^5, and B^9 constructed to be moved in and out along plates B', B^6, and B^8, and B* as hinged to B^4; but it is obvious that this arrangement might be reversed. The plates B', B^6, and B^8 might be attached to B^4, B^5, and B^9, and the plates B^2, B^3, and B^7 be made movable out and in.

Referring to the side-body pattern, Fig. 3, plate C' has a branch, C*. C' is connected to C^2. C^5 and C^6 are joined to C^2. C^7 is hinged to C^6. C^8 is adjustably connected to C^7 and hinged to C^4, which latter is adjustably connected to C^5. At its upper end C^4 is connected to C^3, which latter is adjustably connected to C*. C^9 is a brace connecting C^5 to C^6. I do not consider this as an essential feature. Other equivalent means may be substituted for it. Scales are usually employed on the plates C', C*, C^3, C^5, and C^7, as shown.

Fig. 3ª illustrates the application of the side-body pattern. Lines drawn at the inner edges of all the plates, except C^5 and C^7, give the sewing-lines indicated by dotted lines in Fig. 3ª. The lower edge of C^5 is the waist-line. The seam-line along the inner edges of plates C', C^2, and C^6 joins the seam-line along the inner edges of plates B^4, B^5, and B^9 of Fig. 2. The adjustment of plate C^3 and C*, the hinging of the plate C^8 at the waist-line, and the staying of the plates C^5 and C^6, as described, possess important advantages in enabling the operator to keep the top of the side body of the proper width at the armhole, and to adjust the dress material below the waist to suit the bustle or place the fullness where it is required.

Referring to Fig. 4, which shows the pattern for the back or back body, D^2 is a plate provided with a branch, D*, riveted to it or formed integral with it. Plate D^2 is connected to D'. This plate D' has a curved branch, which is adjustably connected to D^3. D^3 is connected to D^4, which latter is adjustably connected to the upper end of a curved plate, D^5. D^5 is hinged to D^6, which is connected to the branch plate D*. D^7 is adjustably connected to the lower end of D^5, and is connected to D^8, and D^8 is adjustably hinged to D**, which latter is a branch fixed rigidly to D^9, or forming a part thereof. D^9 is connected to D^2. D*** is also a

part of D^9, being usually formed integrally therewith to extend the pattern below the waist-line, which is indicated by the lower edge of D**. D^{10} is hinged to D*** and is adjustably connected to D^{11}, and this latter is hinged to D^8 and adjustably connected to D**. The curved branch of D', (which forms part of the pattern for the neck-curve,) plate D^3, the curved plate D^5, (which forms part of the pattern for the arm-hole,) plate D^6, plate D^7, plate D^9, plate D**, and plate D^{10} are usually provided with scales, as shown. The plates C* on the pattern for the side body, Fig. 3, and the plate D^5 on the pattern for the back body, Fig. 4, each form a part of the armhole-curve, and each is provided with a scale, as shown. Now, when the measure is taken and set on these scales, the portion of the armhole cut by the said plates will be of the proper length. The scales are so proportioned to each other, as will be well understood, that this result will be effected. The parts of this back-body pattern are adjusted and set to the measures, and the piece cut therefrom will take the form shown in Fig. 4^a, the dotted lines in which indicate the sewing-lines. The sewing-line at the center of the back from the waist-line up will usually join the line drawn along the inner edge of D^2 at D*, depending somewhat on the fullness required in the back. The length of the skirt below the waist-line will be determined by fashion. The plates D^{11} and D*** extend down below the waist-line to provide for the necessary fullness for the skirt or basque. By providing an adjustable connection where the lower end of D^5 joins the upper end of D^7 the operator is enabled to place the top of the back-curve higher or lower, as fashion or the figure may require. The sewing-line, marked by plates D^7, D^8, and D^{11}, in Fig. 4, joins the line marked by plates C^3, C^4, and C^8, in Fig. 3. The sewing-line marked by the inner edges of plates D', D^2, D^9, and D*** joins the corresponding line on the other half of the back. The sewing-line marked by plates D^3 and D^4 joins the line marked by the plates A^5 and A^6 in Fig. 1, forming the shoulder-seam.

These four patterns (seen in Figs. 1, 2, 3, and 4) form the patterns for the entire body or "waist" of the dress, except the sleeves. I will now describe the sleeve-pattern, referring to Fig. 7. The plates E' and E^2 are connected and control the size of the sleeve at the wrist. The plates E^3 and E^4 are connected and control the size of the sleeve at the elbow. E^5 is rigidly connected to E^4 at *e* and is connected to E^6. E^5 and E^6 control the length of the sleeve from armhole to elbow on the outside of the arm. E^7 and E^8 are rigidly connected to E^6. E^7 and E^8 control the width of the upper and under pieces of the sleeve at the armhole. The upper piece, e', Fig 7^a, is generally wider than the under piece, e^2, Fig. 7^b, and the difference in their width varies with the fashion. Hereinafter I will explain how this difference is effected with the patterns. E^9 is rigidly connected to E^6 and controls the highest point of the curve in the upper part of the sleeve at the armhole. E^{10} is rigidly connected to E^6 and is connected to E^{11}, which latter is joined to E^{12}. E^{10} and E^{11} control the size of the sleeve at the armhole. E^{12} is connected to E^{13}, which latter is rigidly joined to E^3. E^{14} is joined to E^3 or E^{13} or both, as desired, and E^{15} is connected to E^{14} at one end and rigidly connected to E'. E^{12}, E^{13}, E^{14}, and E^{15} give the shape of the inside of the sleeve and the sewing-line for same, and also control the curve of the sleeve. The rigid connection of E' to E^{15} gives the angle at the wrist-end of the sleeve. The plate E^{16} is adjustably connected to E^2 and connected also to E^{17}, which latter is adjustably connected to E^4 and hinged to E^{18}. E^{18} is connected to E^{19} and adjustably connected to E^7. These plates E^{16} E^{17} E^{18} E^{19} form the outer contour from the hand to the armhole of the larger or upper piece, e', of the sleeve and the outer sewing-line. Plate E^{23} is adjustably connected to E^8 and connected to E^{24}. This latter is adjustably connected to E^4 and hinged to E^{25}. This latter is connected to E^{26}, which in turn is adjustably connected to E^2. These plates E^{23}, E^{24}, E^{25}, and E^{26} form the outer contour from wrist to armhole of the smaller or lower piece, e^2, of the sleeve and the outer sewing-line of this piece. The convex armhole curve at the end of piece e', Fig. 7^a, is formed by the plates E^7, E^{20}, and E^{21}. E^{20} is a curved and slotted plate hinged to E^6 at one end and adjustably connected to plates E^9 and E^{21}. Plate E^{21} is adjustably connected to E^9 and E^{20} at one end, and has a slotted connection at its other end at the junction of E^{11} and E^{12}. The curved plate E^{22} is hinged at one end to the end of E^{23}, and has a slotted connection at the junction of plates E^{11} and E^{12} at the same point that E^{21} is connected therewith. Scales are usually provided on E', E^2, E^3, E^5, E^7, E^8, E^9, and E^{11}. Where the measure is taken from the inside of the arm such scales may also be provided on plates E^{12} and E^{15}.

In cutting out a sleeve with one part wider than the other, as indicated in Figs. 7^a and 7^b, it will be understood that in order to maintain the proper measure, that which is taken from the width of one piece must be added to the other. Therefore I usually make the scales e^3 e^4 e^5 e^6 half-size, and set the connected plates forming the exterior outlines of the pieces e' e^2 accordingly—that is to say, in the example plates E^{16} and E^{26} are set at 1 1 on opposite sides of the zero-mark on the differential wrist-scale e^3, plates E^{17} and E^{25} at 2 2 on opposite sides of the zero-mark on the differential elbow-scale e^4, and plates E^{19} and E^{23} at 6 and 6, respectively, on the differential scales e^5 and e^6 at the armhole. This gives a difference of six inches at the armhole, two inches at the elbow, and one inch at the wrist. The adjust-

ments at e^3, e^4, e^5, and e^6 may be termed the "fashion" adjustments, as they are only used to govern the style of the sleeve and have nothing to do with its size or proportion. On plate E' is the wrist-scale. On plate E^3 is the elbow-scale, and on plate E^{11} is the armhole-scale. It will be obvious that any predetermined difference in the width of the two pieces forming the sleeve as determined by fashion may be maintained without reference to the width or length of the sleeve, the former being determined by the wrist, elbow, and armhole scales just mentioned, and the latter by scales on plates E^5 and E^{16}. The former gives the length from armhole to elbow, and the latter from elbow to wrist.

The dotted lines in Fig. 7 show the position of the parts when the difference between the widths of the two parts of the sleeve is reduced to zero at the wrist, to one inch at the elbow, and to three inches at the armhole. This difference in the widths of the two pieces carries the back seam farther under the arm, and also generally determines the gather or fullness at the elbow; but, as said before, it has nothing to do with the size of the sleeve.

My pattern enables me to retain the size of the sleeve while I vary the difference of width of its pieces, and also to maintain a certain difference in the width of the pieces, and at the same time vary the size. Thus any prevailing fashion as to width of the pieces may be followed by setting the plates of the pattern properly to the differential scales, while the size may be varied for each sleeve cut, if necessary.

To get the high point at the armhole, adjust plate E^{21} to the armhole size along the scale on plate E^9. The other end of plate E^{21} will adjust itself at its connection with E^{12}, as will also plate E^{22} when plate E^{23} is moved.

This pattern enables the operator to draft the sleeve directly on the material, and gives both the cutting and sewing lines. It varies the width of the two pieces at the wrist, elbow, and armhole independently and without disturbing the movements for the size of the sleeve. It locates the elbow-point by measure, and enables the operator to draft any of the ordinary styles of sleeves.

As I have described my pattern, it is adapted to work from a length-measure taken from the outside or back part of the arm, from shoulder to elbow and from elbow to wrist; but I can also take the measure on the inside of the arm, and thus locate the elbow and get the length of the sleeve. In this case I would use the scale on plate E^{12} to locate the elbow, and the scale on plate E^{15} to complete the length. When the measurement is taken in this way, plates E^5 and E^6 may be omitted as non-essential, plates E^{10} and E^8 being in this case united to plate E^7 and plate E^9 to E^{10}. Plate E^{11} should also in this case be rigidly connected to E^{12}, instead of hinged thereto.

In lieu of the construction shown in Fig. 7 and with equally good results, I may attach E^{11} to E^{12} and E^{10} to E^6 down nearer the elbow than as shown, these connected plates E^{10} and E^{11} passing under or over E^{23}, as desired; and in this case I would connect E^8 rigidly to E^6 at the same point that E^7 is connected to E^6. This construction would enhance the symmetrical appearance of the rigidly-connected plates E^6, E^7, and E^8. E^9 might be in this construction secured rigidly to E^8, instead of E^6. This modified construction is illustrated in Fig. 7^c.

In Fig. 7^d I have illustrated another slight modification, wherein plates E^5 and E^6 are omitted. When using this construction, the length from armhole to elbow is taken on the inside of the arm, as I have before stated it may be, and is set on the scale on plate E^{12}. Other slight changes of construction are also illustrated in this view, namely: Plate E^{22} is rigidly attached to plate E^{12} and plate E^{21} is hinged to plate E^{12}, and is made in two parts to slide on each other. Plate E^8 has combined with it integrally plate E^{10}, and plate E^{11} is coupled at its opposite ends to this combined plate and to plate E^{22}, and slides on them. Fig. 7^d shows the modified construction clearly. The scales on plates E^{11} and E^{22} are the same as in the other constructions. It will be observed that the construction is somewhat simpler than that shown in Fig. 7^c, as several plates are omitted; but it does not form so stiff a pattern as the former.

In the several figures, *x x*, &c., indicate clamping nuts and screws or their equivalents, which serve to prevent any sliding of the plates on each other after the pattern is properly set.

By reason of the improvements herein described, I am able to accomplish certain desirable results not, so far as I am aware, heretofore accomplished. By separating the front-body pattern from the pattern for the under-arm piece I am better enabled to follow the usual division of the waist as now made, which calls for two pieces, instead of one, in the front; also, by reason of the improved construction of the pattern for the side body I am enabled to change the width at the armhole, and keep the lines drawn by plates C^6 and C^8 of a better shape below the waist-line. Other advantages have been already set forth.

I do not wish to limit myself to the precise construction of the pattern herein described, as this may be varied to some extent without departing from my invention, as indicated above. Such slight changes come within the knowledge of those skilled in the art, and may be made by any one.

I am aware that it has been proposed to construct an adjustable sleeve-pattern with movable plates for outlining both pieces of the sleeve; but so far as I am aware I am the first to provide such a pattern with differential

scales, as shown, and to so construct it that the style may be varied without changing the size of the sleeve or losing its measurements.

Having thus described my invention, I claim—

1. A pattern for drafting the body of a dress or similar garment, constructed of four separate but interdependent parts, namely: the pattern for the front body, the pattern for the under-arm piece, the pattern for the side body, and the pattern for the back body, each of said part patterns being constructed of connected plates and made adjustable as to size and form, and provided with suitable scales, substantially as set forth, whereby each may be independently set to the measure taken and the parts of the garment cut directly therefrom.

2. In an adjustable pattern for the front body, the combination, with the slotted plates A', A^*, A^2, and A^{13}, and the plates forming the dart-patterns, all constructed and arranged substantially as described, of the slotted angular plate A^{14}, connected to plates A' and A^* and to the tops of the dart-plates, said angular plate A^{14} being mounted to play on the slotted plate A' and on a pin in plate A^*, substantially as shown, whereby its inclination is not altered by adjustment, substantially as and for the purposes set forth.

3. The pattern for the under arm piece, constructed separate from the pattern for the front body, and provided with the plates B^7, B^8, and B^9, to form a pattern for the skirt below the waist-line, substantially as set forth.

4. The pattern for the under-arm piece, provided with the slotted plate B', fixed rigidly to the plate B^2, and the curved plate B^*, hinged to the plate B^1, and adjustably connected to the plate B', to form the armhole-pattern, substantially as set forth.

5. An adjustable pattern for the under-arm piece, comprising the several plates B', B^*, B^2, B^3, B^1, B^5, and B^6, substantially as set forth.

6. An adjustable pattern for the under-arm piece, comprising the plates B^4 and B^5 connected adjustably to the plates B^2 and B^3 by slotted cross-plates, and a curved plate at the top to form part of the armhole-curve, substantially as set forth.

7. The combination, with the adjustable pattern for the side body provided with a slotted connection between the plates C^* and C^3, and with a scale on plate C^*, of the adjustable pattern for the back body provided with a slotted connection between the plates D^5 and D^7, and with a scale on plate D^5, the said scales on plates C^* and D^5 being so proportioned, as described, that when set to measure and the parts cut by the patterns the portion of the armhole cut by said plates C^* and D^5 will be of the desired length, as set forth.

8. An adjustable pattern for the side body, comprising the plate C', provided with the slotted branch C^*, the plates C^2, C^5, and C^6, the plate C^3, connected adjustably to branch C^*, the plate C^4, connected to plate C^3, C^5, and C^6, substantially as shown, the plate C^8, connected adjustably to plates C^5 and C^7, substantially as set forth.

9. The combination, with the plates D', D^2, D^3, D^*, D^9, D^{**}, and D^8 of the back-body pattern, arranged and constructed substantially as described, of the curved plate D^5, slotted at both ends and hinged between said slotted ends to the plate D^6, and provided with scales at these slotted ends, and the plates D^4 and D^7, connected, respectively, to the said slotted upper and lower ends of said plate D^5, substantially as and for the purposes set forth.

10. An adjustable pattern for the sleeve, substantially as described, comprising adjustable plates for drafting both the upper and under parts, e' and e^2, of the sleeve, and said plates provided, substantially as described, with differential scales e^3, e^4, e^5, and e^6, whereby the addition to and subtraction from the width of said pieces may be made without changing the size of sleeve, as set forth.

11. An adjustable sleeve-pattern comprising the sliding plates at the wrist for controlling and adjusting the wrist-measure, the sliding plates at the elbow for controlling and adjusting the elbow-measure, the sliding plates E^{10} and E^{11}, for controlling and adjusting the measure at the armhole, the sliding plates E^5 and E^6, for controlling and adjusting the measure from armhole to elbow, the sliding plates for drafting the inner and outer curves of the sleeve, substantially as described, and the curved sliding plates for drafting the armhole-curves, substantially as described.

12. In an adjustable pattern for the sleeve, the combination, with the plates E^2, E^4, E^5, E^6, E^7, E^8, and E^{10}, arranged substantially as described, of the plates E^{16}, E^{17}, E^{18}, and E^{19}, for marking the exterior edge of the upper piece, e', and the plates E^{23}, E^{24}, E^{25}, and E^{26}, for marking the exterior edge of the lower piece, e^2, all arranged substantially as set forth.

13. In an adjustable pattern for the sleeve, the combination, with the plates E^7, E^{10}, E^{11}, and E^{12}, of the plates E^9, E^{20}, and E^{21}, for forming the convex armhole-curve, all arranged and connected substantially as set forth.

14. In an adjustable pattern for the sleeve, the combination, with the plates E^5, E^6, E^8, E^{10}, E^{11}, and E^{12}, of the plates E^{23} and E^{24}, and the slotted curved plate E^{22}, hinged to E^{23} and having a slotted connection with E^{12}, substantially as and for the purposes set forth.

15. In an adjustable pattern for the sleeve, the combination of the several plates E', E^2, E^3, E^4, E^5, E^6, E^8, E^{10}, E^{11}, E^{12}, E^{13}, E^{14}, E^{15}, E^{22}, E^{23}, E^{24}, E^{25}, and E^{26}, all arranged and connected substantially as set forth, for use in drafting the piece e^2, as described.

16. In an adjusting pattern for the sleeve, the combination of the several plates E', E^2, E^3, E^4, E^{10}, E^{11}, E^{12}, E^{13}, E^{14}, E^{15}, E^{16}, E^{17}, E^{18}, E^{19}, E^7, E^9, E^{20}, and E^{21}, all arranged and connected substantially as set forth, for use in drafting the piece e', as described.

17. In an adjustable pattern for the sleeve,

the combination of the several plates E' E^2 at the wrist, E^3 E^4 at the elbow, E^{10} E^{11} at the armhole, E^{12} E^{13} E^{14} E^{15} at the inside of the arm, E^{16} E^{17} from wrist to elbow outside, E^5 E^6 from armhole to elbow outside, E^9 E^{20} E^{21} convex curve at armhole, and E^{22}, E^{23}, and E^{24} concave curve at armhole, all arranged substantially as shown, whereby the sleeve may be drafted of two like-sized pieces, as set forth.

In witness whereof I have hereunto signed to my name in the presence of two subscribing witnesses.

ALBERT McDOWELL.

Witnesses:
HENRY CONNETT,
GEO. BAINTON.