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METHOD AND MEANS FOR USE IN FITTING CLOTHING

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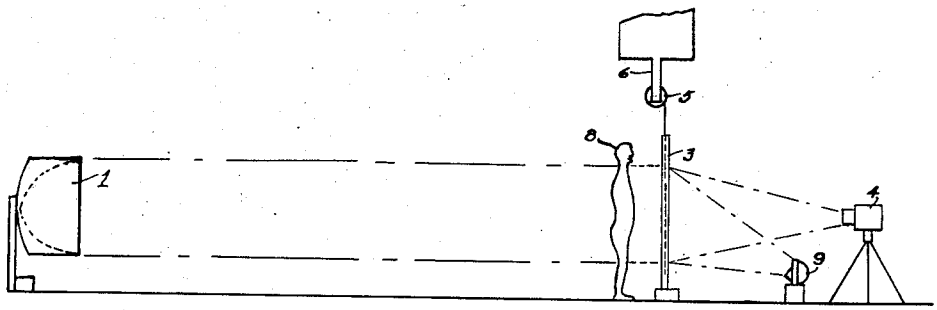


Fig. 1

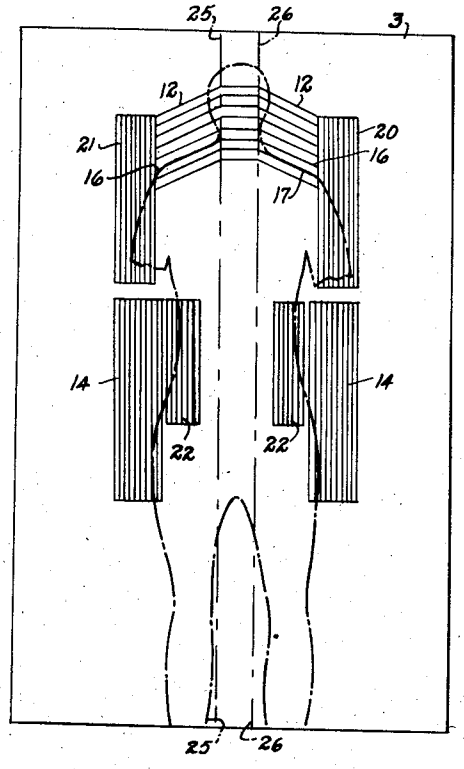


Fig. 2

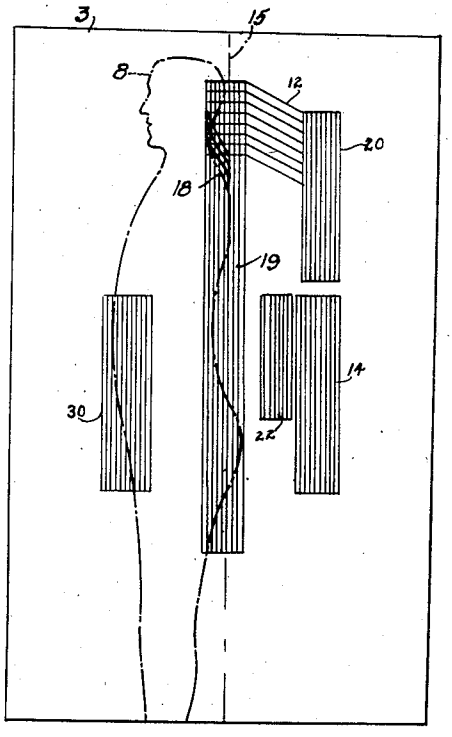


Fig. 3

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METHOD AND MEANS FOR USE IN FITTING CLOTHING

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5 Claims. (Cl. 33—17)

This invention relates to a new method and apparatus by which it is possible to make clothing for a subject, or alter clothing already made, in such a manner that a substantially perfect fit is obtainable.

Heretofore it was and it is at the present time very difficult to fit clothing to a subject without requiring several try-ons and alterations during the process of fitting. This is due to the irregularities of posture of individuals as compared with the normal posture to which ready made clothing is fitted. No practical method is available at this time by which these irregularities can be determined with any reasonable degree of accuracy. All methods pertaining to photographing of an individual or the projection of a photograph strive to provide a means by which actual linear measurements can be secured. In some cases, a picture of the subject is taken superimposed upon a cross-ruled background, and in other cases, a picture of the subject is taken and this picture then projected on such a background. A further method has been tried in which the subject stands back of the maze of vertical and horizontal wires which represent linear distances.

All such methods have proven to be impractical and are not used because of the corrections for diffusion that must be made and also because of the complicated calculations necessary in computing the actual physical contour measurements for the purpose of preparing a pattern to fit the subject. In the manufacture of clothing made to order, and also in making alterations of ready made clothing, it is vitally necessary that all methods that are used be devoid of burdensome complexities, require little if any instruction in application and eliminate substantially all need for calculation.

It is therefore the principal object of this invention to provide a method and an apparatus for the application of this method wherein the physical irregularities of contour of the subject can be determined directly by comparison, and with such results the clothing may be manufactured or alterations made to ready made clothing so that a substantially perfect fit of clothing is accomplished.

It is a further object of this invention to devise a method in the manufacture of clothing made to order whereby the cloth may be cut approximately to size, allowing for the necessary seams, thereby eliminating waste of material which now must be provided in the fitting of clothing by innumerable try-ons in the process of manufacture.

It is a further object of this invention to provide a method which is relatively simple in use and gives results usable in our present day methods of making clothing to fit a subject or in altering ready made clothing.

It is a specific object of this invention to provide a method of making a permanent record of posture irregularities which can be determined directly from the record by means of comparison with standard pattern sizes and which method can be used for the purpose of making alterations of clothing made according to the standard patterns to fit any subject desired.

It is to be noted that this method of fitting clothing does not eliminate the need for taking the usual circumferential measurements of chest, waist, hips, etc., which is now the common practice, but this novel method does supplant the impractical and inaccurate method of securing posture irregularities by estimation or by various mechanical contrivances which are likewise inaccurate or which require complicated computation.

Further objects and advantages of use will become apparent from the specification and the drawing, in which:

Fig. 1 is a diagrammatic illustration of an arrangement which may be used in applying my invention;

Fig. 2 is a front silhouette of a subject corresponding to a front posture which is superimposed upon a screen having represented thereon a series of pattern sizes; and

Fig. 3 is a side elevation of a silhouette of the same subject superimposed upon a screen having represented thereon a series of pattern sizes corresponding to the side posture.

Referring to Fig. 1, a source of light illustrated at 1 is positioned back of a screen 3 a predetermined distance, which distance is sufficient to eliminate diffusion so that the outline of a subject 8 interposed therebetween will be silhouetted onto the screen 3 accurately, that is, in its substantially true size form. I have found by experiment that sunlight or daylight may be substituted for the artificial means represented, and there are also many other types of reflectors which emit non-diffusing rays, and there are other methods of making an accurate full size silhouette. The screen 3 is positioned between a camera 4 and the subject 8. The camera 4 is necessary only in those cases where a permanent record is desired. The location of the cam-

era is immaterial insofar as my method is concerned. The screen 3 may be of any flexible material such as tracing cloth or types of paper of translucent characteristics upon which patterns may be outlined and upon which a silhouette may be formed. It has been found that Celluloid and frosted glass may be used. In the case of such substances as paper or Celluloid, the screen may be mounted upon a roll 5, and after the completion of a fitting, the screen may be removed by rolling onto the roll 5, suspended from a bracket 6, as illustrated in Fig. 1.

A series of pattern outlines conforming to the front posture are illustrated in Fig. 2. These patterns may conform to the finished garment or the normal posture to which garments are fitted. The subject 8 is shown silhouetted, and upon the silhouette or outline are superimposed the lines which represent the important outlines of patterns in proportionate size to the subject's outline, such as block patterns used in the manufacture of clothing. I have found that by placing a direct source of light 9, as illustrated in Fig. 1, these pattern lines are clearly visible within the silhouette. This source of light may be indirect if desired. The subject may be positioned with reference to the screen by using reference lines 25 and 26.

Assuming the silhouette represented to be the outline of the subject to be fitted, the sloping lines 12 represent a shoulder slope conforming to a series of predetermined pattern sizes. For instance, line 16 may represent a shoulder slope of size A standard block pattern, and line 17 of size B block pattern. The left shoulder slope of subject 8 would conform to size B pattern, while the right shoulder slope would conform to size A pattern.

The vertical lines 20 and 21 denote the shoulder widths and correspond to the standard patterns. Likewise, vertical lines 14 represent the width of hips corresponding to pattern size and vertical lines 22 the width of the waist. Other lines may be included for the purpose of ascertaining posture comparisons. However, I have merely illustrated some for the purpose of disclosing my invention.

Fig. 3 illustrates the same subject 8 positioned at right angles to that of Fig. 2 and silhouetted upon screen 3 having represented a series of pattern outlines corresponding to this posture. The subject is positioned with reference to line 15 so that the most extreme point of the back coincides with the reference line. The curved lines 18 represent the scye or incline of the normal pattern sizes, and by means of comparison the irregularities of the subject 8 can be determined and the proper alteration made before cutting the material. The amount of sway in the back can be determined by comparison with the vertical lines 19 and the amount of alteration determined because of the direct reference to standard patterns. Other side irregularities of posture may be determined by graphically representing thereon the corresponding pattern outlines. The same screen or background may be used for both the front and side postures, as represented in Fig. 3.

It is to be observed from the above description that in the use of the present invention, it is not necessary to calculate the actual linear measurements, but by means of comparison, the necessary modifications or alterations over a standard pattern can be determined directly, in other words, the outline of the subject is in a fitting relation to the pattern indicia, and by this visible indication of fitting relation, the conformance and non-conformance of the outline of the subject is visibly indicated to the operator. By increasing the number of patterns represented on the screen, more accurate results can be obtained because this affords a more favorable basis for comparison. By this comparison the essential information is secured for laying out a pattern of the subject's posture preparatory to the making of the garment. Also, necessary alterations may be made to a ready made garment cut over a standard pattern.

This comparison may be made directly from the screen or a photograph may be taken and a record made for later use. To accomplish the best results, the subject 8 should be positioned as close as possible to the screen, and in all cases he must assume a normal position in standing which is facilitated because the subject is not required to face a camera.

In using the invention disclosed, it is usually necessary to take the usual circumferential measurements, chest, waist and hips of the subject, although it is not necessary since a technique of comparison may be developed wherein the operator can determine these from the silhouette. After such measurements are taken, the subject is then positioned back of the screen, as illustrated in Figs. 1 and 2, and with reference to center lines 25 and 26, the irregularities of posture may be noted or a photograph taken. The subject is then turned to a position illustrated in Fig. 3, which is at an angle of 90° to the position illustrated in Fig. 1. The subject may be positioned with reference to any pronounced part of the body and a corresponding line on the chart, this depending, of course, upon the construction of the pattern sizes on the screen 3. Other positions of the subject may be made, these depending upon the manufacturer or vendor of clothing. I have found by use that the two positions illustrated in Figs. 2 and 3 are sufficient.

It is to be observed that my method eliminates substantially all errors of diffusion predominant in methods now known of photographing a subject. In other words, the outline of the subject's posture is projected accurately in full size and the outline of patterns on the screen is in full size. This full size representation permits an accurate determination of the irregularities of outline of the subject's posture as compared with the block patterns as represented thereon. By means of this comparison the necessary alterations of garments manufactured in accordance with a standard pattern as graphically represented on the screen may be made accurately. Furthermore, by means of this comparison a pattern may be prepared for the purpose of the cutting and assembling of material into a garment which will properly fit the subject. An example of this use is the practice now made of "made to measure" clothing. For the purpose of record a photograph may be taken of the silhouette which is projected onto the screen and is in a visible fitting relation to pattern indicia, which record may be used by a manufacturer of clothing or for the purpose of a later use.

It is obvious from the above description that the use of my invention is relatively simple and its use requires the employment of inexpensive apparatus so that the method provides a practical means for use in the making of garments or the altering of ready made garments.

Having thus described my invention, I claim:

1. The method of comparing a person to be fitted with a garment to a standard pattern, comprising superposing a substantially true outline of the person by projected light rays on a screen having thereon visible indicia of a standard pattern, and shifting the relative position of the outline and screen to position the outline as near as may be to a fitting relation to the visible indicia of the standard pattern for visibly indicating the conformance and non-conformance of the outline and the standard pattern.

2. The method of comparing a person to be fitted with a garment to a standard pattern, comprising interposing the person between a screen having thereon visible indicia of a standard pattern and a source of light emitting substantially parallel rays toward and substantially normal to the surface of the screen, thereby defining thereon in cooperation with the person a substantially accurate and full size outline of the person, shifting the relative position of the person and screen in directions parallel to the plane of the screen for positioning the outline as near as may be to a fitting relation to the standard pattern for visibly indicating the conformance and non-conformance of the outline to the standard pattern.

3. The method of comparing a person to be fitted with a garment to a standard pattern comprising interposing the person between a translucent screen having thereon indicia of a standard pattern visible on the front face of the screen and a source of light emitting substantially parallel rays toward and substantially normal to the rear surface of the screen, thereby defining thereon in coooperation with the person a substantially true silhouette of the person, shifting the relative position of the person and screen in directions parallel to the plane of the screen to position the outline as near as may be to a fiting relation to the indicia of the standard pattern, rendering the indicia visible both inside and outside of the outline of the silhouette, and then viewing the silhouette from the front face of the screen for determining the conformance and non-conformance of the silhouette outline and the standard pattern.

4. An apparatus for comparing a person to be fitted with a garment to a standard pattern, comprising a translucent screen having visible on the front side indicia of the standard pattern, a source of non-diffusing light positioned back of the screen for forming a true size silhouette on the screen by interposing the person between the source of light and the screen, a means for positioning the silhouette into fitting relation with the visible indcia, illuminating means in front of the screen for rendering visible the indicia of the patterns both inside and outside of the silhouette, and a means in front of the screen for photographing the silhouette in fitting relation to the indicia of the pattern, whereby the conformance and non-conformance of the person to the standard pattern is visibly indicated.

5. An apparatus for comparing a person to be fitted with a garment to a standard pattern, comprising a translucent screen having visible on the front side indicia of the standard pattern, a source of non-diffusing light positioned in back of and in spaced relation to the screen a sufficient distance to accommodate the person between the source of light and the back of the screen for forming on the screen a true size silhouette of the person when the person is interposed between the source of light and the screen, a means for positioning the silhouette into fitting relation with the visible indicia, and illuminating means in front of the screen for rendering visible the indicia of the patterns both inside and outside of the silhouette, whereby the conformance and non-conformance of the person to the standard pattern is visibly indicated.

EDWARD JOHN McGRATH, Jr.