F. L. SCOTT.
METHOD OF TROUSERS CUTTING.
APPLICATION FILED MAR. 6, 1912.

1,114,190. Patented Oct. 20, 1914.

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

WITNESSES:

G. H. ROACH
Glady Jameson

INVENTOR

ATTORNEY
METHOD OF TROUSERS-CUTTING.

UNITED STATES PATENT OFFICE.

FARR L. SCOTT, OF TOLEDO, OHIO.

METHOD OF TROUSERS-CUTTING.

1,114,190.
Application filed March 6, 1913. Serial No. 692,062.

To all whom it may concern:

Be it known that I, Farr L. Scott, a citizen of the United States, residing at Toledo, Lucas county, Ohio, have invented a Method of Trousers-Cutting, of which the following is a specification.

This invention relates to the cutting of trousers, having a special utility when adopted in connection with single and double thigh measures. In carrying out this cutting, sets of accurate graded scales may be adopted and incorporated in a rule, thereby eliminating computations, guess work and more or less crude approximations.

Referring to the drawings: Figure 1 is a draft of a forepart of a trousers leg in accordance with the invention herein; Fig. 2 is a draft of a backpart of a trousers leg; Fig. 3 is a view of one side of a rule showing certain sets of scales having particular utility in the cutting of trousers; Fig. 4 is a view of the opposite side of the rule of Fig. 3, showing additional sets of scales having further utility in trousers cutting; and Fig. 5 is a fragmentary outline of a human form to illustrate procuring of trousers dimensions.

The individual removes coat and vest and anything in trousers pockets which might interfere with obtaining proper measurements. The individual then takes his position on a slightly raised block, assumes a normal attitude, with feet neither close together nor spread apart. With the waist band of the trousers above the hip bones, the individual wearing the old trousers may be measured properly for new trousers.

The outline in Fig. 5 is indicated nude in order that the location of the points may be more clear. To procure the dimension W—B of Fig. 1 for the outseam of the trousers, measurement is taken from the waist line W, Fig. 5, just above the hip bones, to the floor at a point directly in front of the heel of the individual and at the outside of the foot. In order that the garment may properly clear the floor, a deduction of \( \frac{3}{4} \) in. is made from this measurement, leaving the net outseam length.

To procure the inseam dimension, measurement is taken from the crotch of the individual to the floor, inside of the foot and forward of the heel, with \( \frac{3}{4} \) in. deduction as for the outseam. This dimension is laid out on the draft to determine the point T from the point B.

For front rise of the trousers, the square is placed close up in the crotch of the individual with the upstanding arm of the square perpendicular to the floor, and the distance to the waistband on this arm is taken. Bottom measurement at point B and knee measurement at point K may be elected as desired.

The single thigh measurement is taken, say usually on the left side about the leg horizontally and close up to the crotch. The double thigh measurement is taken in the same plane, but about both legs, with similar tension on the measuring tape as used in single thigh measurement. In a parallel plane and with similar tape tension, the seat measurement is taken around the largest part of the buttock, as at line S, Fig. 5. With the waist measurement taken immediately above the hip bones, quite snugly if desired for belted trousers, the measurements are complete.

In proceeding with the draft, main construction line B—W may be laid off, Fig. 1, for a forepart, being actual or full scale dimension. A point B is taken as the bottom. For the knee, the point K may be determined by taking one half the inseam dimension, add 2 in. thereto and lay off from the point B along the line B—W. The point T is the inseam measure laid off from the point B along the line B—W. The point S is determined by taking one half of the seat measurement and laying it off on the line B—W from the point T away from B, or toward W. To eliminate computation and incidental liability to error, a rule, Fig. 3 is provided, having the scale 1/6 S thereon, permitting direct reading by placing the S edge of the rule along the line B—W with the T edge thereof to the right. This position of the rule, with the line S—T of the rule at the point T, makes possible the location of the point S between T and W at once. The point W is determined by laying off the front rise from the point T toward W, or away from B. Except as to the point S, all of the above dimensions laid out on the draft are to full scale. These points determine all of the height dimensions, and each may have a line passed therethrough at right angles to the main draft construction line B—W.

To facilitate the laying out of the trouser widths on the basis of the dimensions procured from the individual, the rule of Figs. 3 and 4 is advantageously used. Placing
the side of the rule shown in Fig. 4 up, with
the medial rule line B—W alined with the
construction line B—W of the draft and the
W point of the medial rule line at the point
W of the draft, all is in readiness for mark-
ing the points 1 and 2 of the waist by using the
direct reading for waist as taken from
the individual. These W—W scales of the
rule are one-eighth actual waist measures
taken by the tape, and accordingly the point
W of the draft is midway between the points
1 and 2. As there are two foreparts and
two backparts to make a complete trouser
waist, the half of one of these four elements
makes one eighth of the waist between W
and the point 1 or W and the point 2.
Turning the rule over from its position at
the point W on the draft, and moving
down to the point S, the side of the rule of
Fig. 3 is shown, and the scales S—S are in
position for direct marking of the points 3
and 4. The lower S scale of Fig. 3 is the one
which determines the point 4 and its gradu-
ations from the medial line T—S of the
rule are on the basis of five-sixteenths
actual dimension, less three-sixteenths of an
inch. The upper S scale of Fig. 3 is the one
which determines the point 5 and its gradu-
ations from the medial line T—S of the rule
are on the basis of three-sixteenths actual
dimension, plus five-sixteenths of an inch.
Without turning the rule over, place the
point T of the rule over the point T on the
draft with the line T—S of the rule alined
with the draft construction line T—S, the
point 6 may be laid off directly as the double
thigh dimension taken from the individual
by the scale DT, while the point 5 is at the
same time located on basis of the single
thigh dimension and the use of the scale ST
of the rule. The scale DT is fifty-three-
seconds actual plus three sixteenths of an
inch. The scale ST is five sixteenths actual
minus three fourths of an inch. With the
arrows on the rule directed toward the left,
as in all of these trouser draft width meas-
urement determinations, the rule is turned
over from the position at which the single
and double thigh markings have been made,
so that the point W of the rule falls on the
point W of the draft and the line B—W of
the rule alines with the line B—W of the
draft. The actual knee measurement elected
may be doubled, and the readings on the W
scales then directly applied, i. e., 38 for a
fourteen inch knee, etc., thus locating the
knee points 7 and 8. The rule is then moved
to have point B of the rule over the point B
of the draft, and with the line B—W of the
rule alining with the line B—W of the
draft, and the bottom width points 9, 10, are
marked by reading off directly on the inner
B scales. These inner B scales are nine for-
tieths actual plus one sixteenth of an inch.
The scale A beyond one of the W scales is
actual and may be in inches. By using this
A scale ½ in. may be added beyond the point
5 to determine the point 11, allowing for
dress, the garment element for the left
side being made this much larger than the
similar fore part element for the right side. For this same condition, at
point 3 three eighths of an inch is
taken each way, and at point 1, one
fourth inch each way, the respective curves
drawn through these points showing on Fig.
1, indicate the outlines for the two elements
as in practice disclosed on a common draft.
The draft outlines are extended to the knee
point 7 and thence to the bottom point 9.
The point 11 is disposed slightly below the
line through T so that the seam lines 3, 7
and 11, 7 are equal. The hollowing out
above B is for foot clearance.

The difference between outseam and in-
seam dimensions determines the length of
the curve fared from point 6, through the
points 4 and 2 to the point 12. The point
12 is connected through the point W to the
point 1 to complete the draft, the side seam
line having been before extended up
from the point 10, through the point 8 to
the curve from the double thigh point 6.
In the backpart draft of Fig. 2, the outer
B scales of the rule as shown in Fig. 4, are
used to determine the back part bottom
widths in a similar manner to the front
widths 9, 10. These back part bottom
widths are accordingly marked as points 13,
14. These outer B scales are three tenths
actual plus three sixteenths of an inch.

The back waist suppression is determined by
locating the point 15 on the W cross
line of the draft, Fig. 2. The back waist
suppression is observed upon taking meas-
urements of the individual, say as normal,
above or below. The rule is placed on the
draft with the S edge passing through the
point 3, the remaining lines diverging to the
right from the point 3. For normal back
waist suppression, the radiating line in the
middle, marked 75, to indicate 75° may be
used and the rule is so shifted that this
line 75 from the point 3 is alined with the
line 3, 4 on the draft through the draft
point S. The intersection of the S edge
of the rule with the waist line through W
locates the point 15. The angle for the seat
seam for the back part is thus fixed. The
length for this line is determined by using
the rule scale 1/6 S, with the scale shifted
along to have the point S of the rule center
fall on the point 15 of the draft. The di-
rect reading for the seat measurement taken
indicates the point to be marked. This
marking 16 fixes the top of this back seam,
when ordinary trousers are to be made.
However, if the draft is for hip trousers,
or trousers to be worn with a belt, instead
of placing the point S of the rule on the 130
point 15 of the draft, the point H of the rule is placed on the point 15 of the draft. The 1/6 S scale is one sixteenth actual plus seven eighths of an inch when read from the point S of the rule, while it is one sixteenth actual plus one fourth inch when read from the point H of the rule.

Location of draft points is above discussed particularly as to the use of the rule scales and their peculiar ready adaptation for accurate location. The ranges of the scales are sufficient to meet the conditions usually found in practice.

In making garments, good practice is to have the individual present a normal appearance. Accordingly it is not proper to emphasize the peculiarities of the individual by too close adherence to dimensions departing from normal. The single and double thigh measurements as taken and applied to the draft, contribute to insure proper-fitting garments, especially when taken in connection with the seat measurements. As an automatic check, it is to be noted the DT scale and the S scale of the rule are adjacent, the normal dimension in one scale approximating the line of the corresponding dimension in the other. That is, an individual having a 34 in. seat measurement, should have 31\(\frac{3}{4}\) in. as normal double thigh measure.

The use of the single and double thigh measurements automatically fix the location of the legs of the individual, whether close or far apart, and adapt the garment accordingly, also taking into account leg size as well as leg position. With the legs of the individual set far apart on the body, the double thigh measurement would be large relatively to the normal seat measurement.

With the individual’s legs close together, the seat measurement is relatively small as to the single thigh measurement. These single thigh, double thigh and seat measurements are the basis for observation as to back waist suppression. With legs spaced apart, there is less angle to the back part, owing to the flatter back, and 30 line is used; while with legs close on the body, the seat is more prominent and great incline is needed, the 70 line for 70° being used in making the draft.

What is claimed and it is desired to secure by Letters Patent is:

1. The improvement in method of measuring for trousers and plotting the draft for the patterns thereof comprising taking the seat circumference at the seat and single and double thigh circumferences at the crotch of the person for whom the trousers are being drafted, applying said seat dimension directly to the draft at the seat, and applying independently of the seat measure, the single thigh and double thigh measures directly to the draft at the crotch and respectively in opposite directions from a common point and independently of the seat measure.

2. The method of plotting trouser drafts which comprises providing a draft construction line, providing a bottom line near one end of the draft line and bisected by said draft line, providing a waist line at the other end of the draft line and bisected by the draft line, laying off the crotch point on said draft line, and laying off respectively in opposite directions from said crotch point single and double thigh dimensions.

3. The method of determining back waist suppression in cutting trouser drafts employing longitudinal and transverse construction lines, embodying the determination of the back waist suppression angle as to a construction line, and the marking of the direction of the back waist suppression from said angle upon the draft.

4. The method of cutting trousers including the determination of the type of form as to back waist by single and double thigh measurements at the crotch and seat size at the seat, applying said thigh dimensions in opposite directions from a common point and the seat dimension from a second point, said dimensions being applied as independent widths to the pattern draft at correspondingly spaced points.

5. The method of cutting trousers including the determination of the type of form as to back waist by single and double thigh measurements at the crotch and seat size at the seat, applying said thigh dimensions in opposite directions from a common point and the seat dimension from a second point, said dimensions being applied as independent widths to the pattern draft, and applying less inclination to the back part as these dimensions show a prominent seat.

FARR L. SCOTT.

Witnesses:
JAMES W. HARBUGH,
JAS. S. MARTIN.

Copies of this patent may be obtained for five cents each, by addressing the “Commissioner of Patents, Washington, D.C.”
It is hereby certified that in Letters Patent No. 1,114,190, granted October 20, 1914, upon the application of Farr L. Scott, of Toledo, Ohio, for an improvement in "Methods of Trousers-Cutting," an error appears in the printed specification requiring correction as follows: Page 3, line 87, for the word "circumstance" read "circumference;" and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 10th day of November, A. D., 1914.

[SEAL.] R. F. WHITEHEAD,

Acting Commissioner of Patents.