Feb. 6, 1968 B. N. LEE 3,367,029

GRADING TOOL DEVICES, ESPECIALLY ADAPTABLE FOR USE IN THE GARMENT INDUSTRY

Filed June 22, 1965

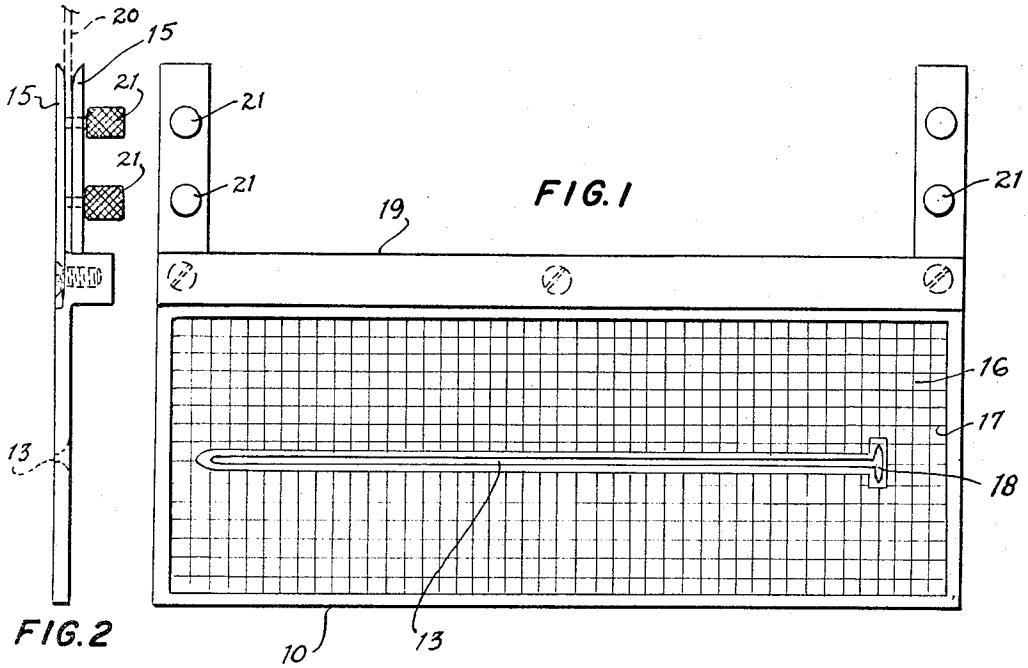

FIG. 2

FIG. 1

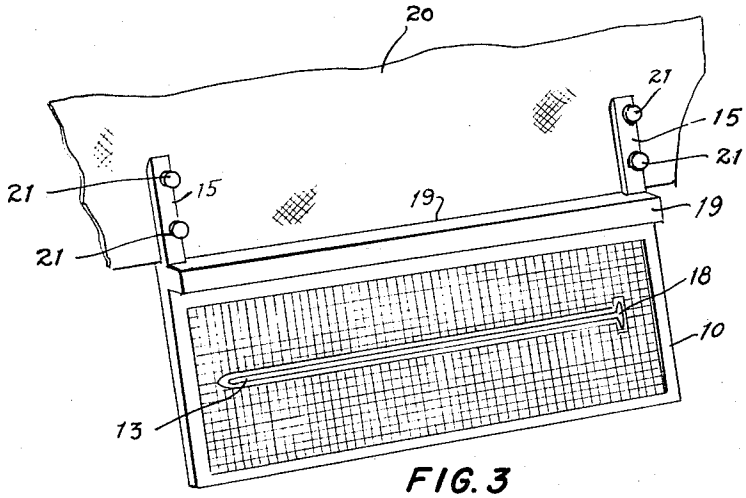

FIG. 3

INVENTOR.
BOB NAKAYAMA LEE

BY Peter W. Boesen

ATTORNEY

United States Patent Office

3,367,029
Patented Feb. 6, 1968

1

3,367,029

GRADING TOOL DEVICES, ESPECIALLY ADAPTABLE FOR USE IN THE GARMENT INDUSTRY

Bob Nakayama Lee, 1616 78th St., Brooklyn, N.Y. 11236

Filed June 22, 1965, Ser. No. 465,997
2 Claims. (Cl. 33—17)

This invention relates to new and useful improvements in grading tool devices, which are used in the garment industry.

It has for its object to provide a tool for use in increasing or decreasing the size of patterns to fit larger or smaller wearers.

The practice of increasing or decreasing the size of a pattern, while maintaining the same contour, is commonly known in the garment industry as "grading" the pattern. It is accomplished by increasing, or decreasing, the structure, as the case may be, at selected central or intermediate point or points and not by merely providing a border of uniform width along the entire distance around the pattern.

It is also the object of this invention to provide a tool that is small, light-weight, and easily carried or moved about for use on any border of the pattern that is being graded, to secure a uniform increase or decrease in the dimensions of said pattern.

It is further the object of this invention to provide a tool for grading patterns that is easy to use, simple of construction, and that may be manufactured at a reasonable cost.

With the above and other objects in view, this invention consists of the novel features, combination and arrangement of parts hereinafter fully described, claimed and illustrated in the accompanying drawing, forming part of this application, in which similar characters of reference indicate corresponding parts in all views, and in which:

FIGURE 1 is an elevational view of my invention;

FIGURE 2 is a transverse sectional view of same; and

FIGURE 3 is a view similar to FIGURE 1, but showing my said invention in operation.

Referring more particularly to the drawing, a scale of transparent material is shown at **10**; said scale is provided with two sets of parallel lines, **16** and **17**, the one set being substantially perpendicular to the other, by means of which to indicate measurements, or change of these.

The said scale **10** is formed with a longitudinal slit **13** as a basis for making calculations; said slit terminates, however, in a slit **18** perpendicular to slit **13**, thereby forming the base for a starting point in making said calculations of measurements relative to a pattern.

In using the scale to effect the grading, the basic pattern **20** which is being graded to a larger or smaller size will rest against the edge **19** of said scale, while simultaneously said basic pattern will also be held by the bifurcated arms **15, 15**, as shown especially in FIGURE 2 and secured in place by set screws **21, 21**.

This invention is used by gripping the edge of a pattern to be graded, which for convenience will be here referred to as the "master pattern," with the arms **15, 15**. The master pattern and grading tool are then laid upon a flat sheet of pattern material, such as paper, with the arms of the tool at the edge farthest from the operator, slit **13** in a lateral direction with respect to the operator, and slit **18** to the operator's right.

A fine line is drawn through slit **13** and a line perpendicular thereto is drawn through slit **18**. These two lines

2

form a reference, or starting point, for grading the pattern.

If the master pattern is to be graded by increasing its size in a direction extending away from the operator and perpendicular to slit **13**, the outline of the nearer edge of the master pattern is traced on the pattern material, up to a point previously indicated on the master pattern, where the increase is to be made. As an example, assume that the master pattern is to be graded by increasing its length one-quarter inch. The tool with the master pattern still gripped by arms **15, 15** is then moved away from the operator for a distance sufficient for the line previously drawn through slit **13** to be covered by a guide line on the tool exactly one-quarter inch below the slit **13**. Since the guide lines on the tool are spaced one-eighth inch apart, this means that the pencil marked line previously made through slit **13** will now be covered by the second line from the slit **13** in a direction toward the operator.

Tracing the outline of the master pattern on the pattern material is then continued, and if a single increase in length has been indicated, the outline of the master pattern is completed on the pattern material.

If an increase in the lateral dimension of the master pattern has been indicated instead of an increase in length, the master is traced at one side, to the point where the increase is to be made, and the tool and master pattern are then moved, using the mark made in slit **18** as the starting point, in the direction away from the side where the master has been partially outlined on the pattern material. Since the guide lines on the tool are spaced one-eighth inch apart, the tool and master pattern should be moved one space, either away from the operator or laterally, as required, for each one-eighth inch required to grade the pattern.

Grading of a pattern to decrease the size is accomplished in the same manner, with movement of the tool in opposite directions to those specified above for effecting an increase in size.

It is obvious that changes may be made in the form and construction shown and described herein, without departing from the spirit of the invention and within the scope of the appended claims, and I do not, therefore, desire to limit myself to the exact disclosure set forth herein.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is:

1. A grading tool adapted for use in the garment industry and comprising a scale, the latter being of transparent material, substantially rigid, two sets of perpendicularly disposed parallel lines arranged upon said scale, a longitudinal slit formed therein, and a second slit disposed at one end of the longitudinal slit and perpendicular to the latter, whereby to obtain a base as a starting point in making calculations, bifurcated arms extending from said scale and adapted to receive the material or pattern subject to the calculations, and means disposed in said arms whereby to retain the material or pattern in position during operation.

2. A device, as claimed in claim **1**, wherein the longitudinal slit is disposed substantially at the center of the tool.

References Cited

UNITED STATES PATENTS

1,840,568	1/1932	Clark	33—104
2,569,265	9/1951	Sudhoff	33—12
2,711,588	6/1955	Ingram	33—12
3,156,046	11/1964	Potter	33—12

LEONARD FORMAN, *Primary Examiner.*

LLOYD V. ANDERSON, *Assistant Examiner.*