July 3, 1951 L. GUILD ET AL 2,558,846

HOSIERY SIZE GAUGE

Filed Aug. 13, 1948 2 Sheets-Sheet 1

FIG. 1

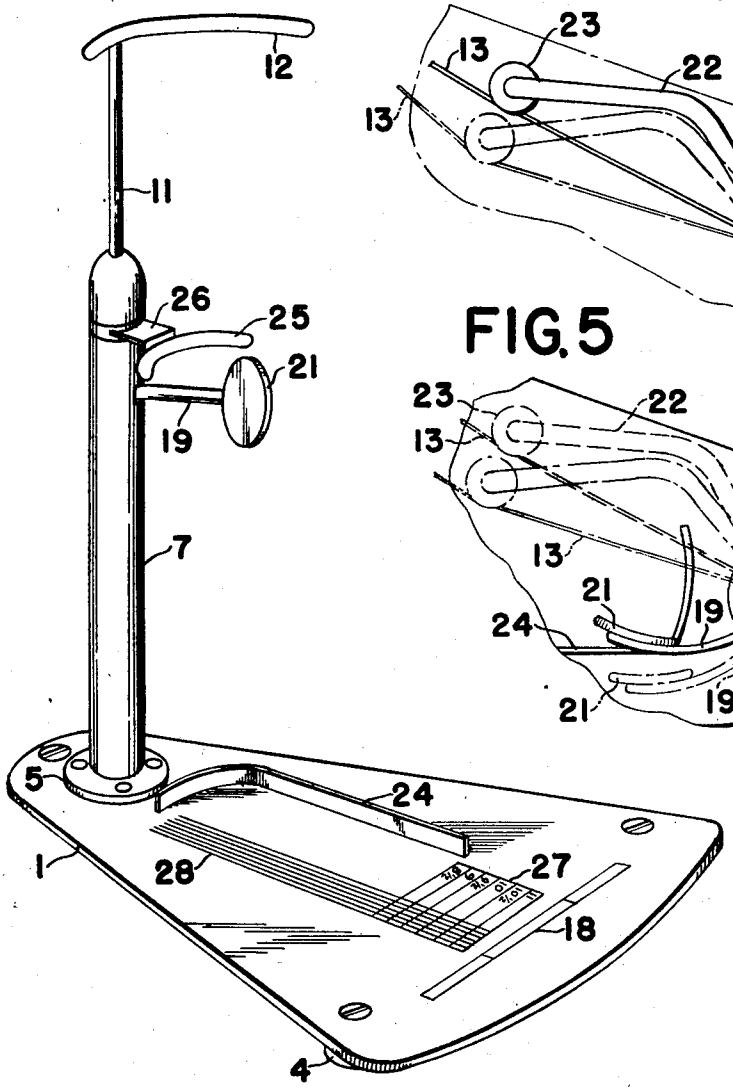


FIG. 4

FIG. 5

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July 3, 1951 L. GUILD ET AL 2,558,846

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Filed Aug. 13, 1948 2 Sheets-Sheet 2

FIG. 2

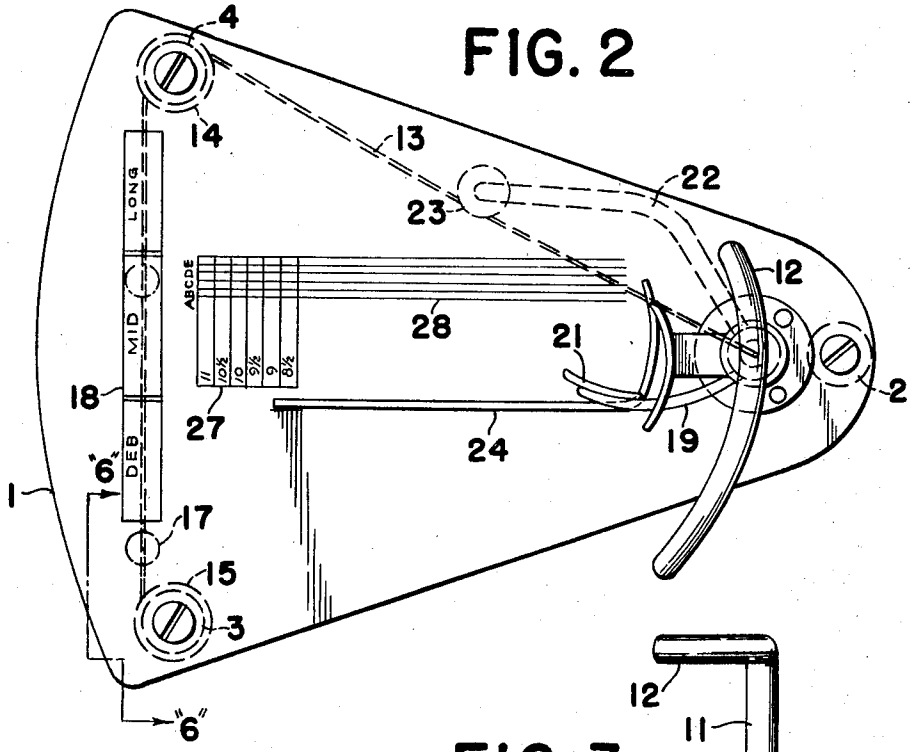


FIG. 3

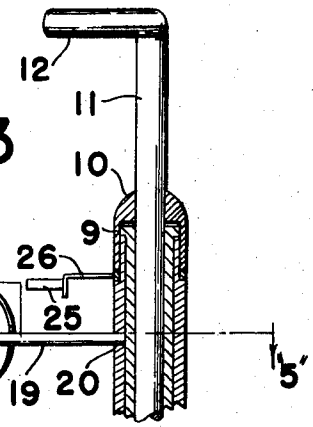
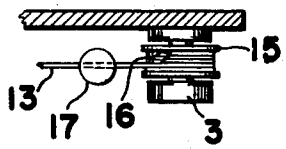
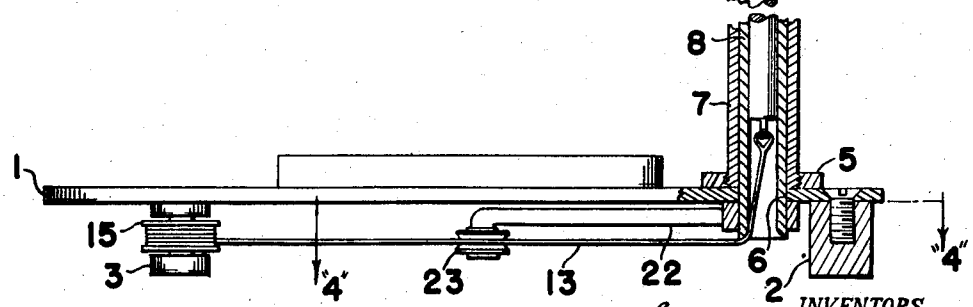


FIG. 6





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HOSIERY SIZE GAUGE

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Application August 13, 1948, Serial No. 43,978

1 Claim. (Cl. 33—2)

1

Our invention is a meter for giving a composite indication of length and breadth, and is particularly designed for indicating sizes of stretchable hosiery legs requisite for covering leg areas of different lengths and girths.

The length and girth of human legs vary widely for a given size foot, and the point along a leg at which it is desired to attach a garter to a stocking varies with the type of garter and garter support and the individual preference of the wearer. While the inherent circumferential stretch of knit hosiery and particularly of full fashioned hosiery, permits a wide range of accommodation of hosiery of given circumference to legs of different girths, the consequent circumferential stretching of the fabric causes lengthwise contraction of the stocking leg roughly proportional to the circumferential stretch thereof.

A quality hosiery of given foot size is customarily manufactured of several lengths, commonly designated "Deb," "Mid" and "Long," but the circumferential dimensions of all lengths for a given foot size are approximately the same. Hence, an estimation of a suitable leg length of hosiery merely from measurement of the distance between foot and gartering point is unsatisfactory because the effective length of the stocking leg when worn is materially affected by the girth of the leg, particularly in the calf region thereof.

Our invention provides a meter by which the most suitable available leg length of hosiery may be quickly ascertained from a composite indication predicated on the distance between the sole and gartering point and on the projection of the calf, or other predetermined part of the leg, outwardly from a norm or datum.

Our meter comprises an indicator; a foot rest having a guide for positioning a foot thereon relatively to a datum position of the indicator; and actuators operatively associated with the indicator and movable by or along a leg in predetermined position relative to such datum position to impart a composite movement to the indicator commensurate with vertical and horizontal movements of the respective actuators.

The actuator movable lengthwise of the leg preferably includes a handle guided vertically by a rod connected with the indicator through an intermediate connector, such as a flexible strip. The actuator movable radially of the leg preferably includes a pair of complementary oscillatable arms, one of which is contacted and moved horizontally by the leg and moves the other arm relatively to the connector and causes it to move the indicator. The connector may be biased against the action of the actuators by connecting it with a spring reel.

2

If desired, a supplementary guide may be mounted above the foot rest for more accurately positioning the leg during measurement.

The principles of our invention, and the best mode in which we have contemplated applying such principles, will further appear from the following description and the accompanying drawings in illustration thereof.

In the drawings, Fig. 1 is a perspective view of a meter embodying our invention; Fig. 2 is a top plan view thereof; Fig. 3 is a side elevation thereof with parts broken away; Fig. 4 is a fragmentary, horizontal sectional view taken approximately on the line 4—4 of Fig. 3; Fig. 5 is a part phantom, irregular horizontal, sectional view taken approximately on the line 5—5 of Fig. 3; and Fig. 6 is a fragmentary, transverse, sectional view taken approximately on the line 6—6 of Fig. 2.

In the embodiment of our invention illustrated in the drawings, a triangular, opaque, plastic base or footrest 1 is supported upon short legs, 2, 3 and 4 at the corners thereof. A collar 5 is fixed on the upper surface of the base around an aperture 6 therethrough and a hollow post or pillar 7 is threaded into the collar 5 and projects vertically upward from the base near one corner thereof. The pillar 7 forms a housing and support for a sleeve or hollow shaft 8 which extends downwardly through the aperture 6 and has a radial flange 9 which is supported on the reduced top of the pillar 7 and retained in place by a cap 10 threaded thereon.

A rod 11 is rectilineally slidable in the sleeve 8 and through the open top of the cap 10 and is surmounted by a curved arm 12 forming a handle by which the rod may be manually manipulated. The lower end of the rod 11 has connected therewith a connector consisting of a flexible strip, such as wire 13, which passes through and beneath the base 1, around a guide 14, journalled on the leg 4, and is wound on a reel 15 journalled on the leg 3.

The reel 15 is normally biased by a coiled spring 16 in an anticlockwise direction (looking from the top) so as to apply tension to the connector or wire 13 and draw the rod 11 downward in the sleeve 8.

An indicator, such as a ball 17, is fixed on the connector or wire 13 so as to lie between the reel 15 and the adjacent end of a transparent strip

18 in the base when the wire is wound on the reel to bring the rod 11 to its lowermost position. The transparent strip 18 extends across the front of the base 1 and forms a sight gauge above the section of wire stretched between the guide 14 and the reel 15 and may be subdivided into sections bearing suitable indicia such, for instance, as "Deb," "Mid," and "Long."

The shaft 8 has fixed thereto a curved arm 19 which projects through an elongated circumferential slot 20 in the pillar 7, and has fixed to the end thereof a concave bearing plate 21 for engagement by the calf of a leg to turn the shaft 8 about its axis. A bent arm 22 is fixed to the bottom of the shaft 8, below the base 1, and has journalled thereon a pulley 23 movable into engagement with the wire 13 to apply tension thereto when the arm 22 is rocked by the shaft 8 as a result of the lateral displacement of the plate 21 and arm 19.

A substantially L-shaped guide rib 24 projects upwardly from the base 1 with the curved shorter leg of the guide section adjacent to the base of the pillar 7, and a curved guide 25 is supported above the plane of the arm 19 by a bracket 26 which is clamped between the bottom of the cap 10 and a shoulder of the pillar 7. The guides 24 and 25 tend to position a foot and leg engaged therewith substantially centrally of a radius of the pillar 7 intersecting the scale 18. A "length" scale 27 is engraved or otherwise marked on the base 1 transverse to such radius and substantially parallel to the shorter or "heel" section of the guide 24, and a "width" scale 28 is engraved or otherwise marked on the base 1 parallel to such radius and to the longer leg of the guide section 24.

In the idle position of the meter, the wire 13 is wound on the reel 15 so that the indicator 17 is displaced laterally beyond the sight gauge 18; the rod 11 is at the bottom of its travel, the arm 22 is rocked to its outermost position so that the wire 13 is substantially straight and tangent to the pulley 23, and the shaft 8 and arm 19 are correspondingly rocked so that the bearing plate 21 is adjacent to, and preferably within, the vertical plane of the longer leg of the guide rib 24.

When the required size of a stocking is to be determined, a foot is placed on the base with its heel in contact with the shorter section of the guide rib 24 and the side of the foot in contact with the longer section of the guide rib 24 and with the back of the leg contacting and centered with relation to the guide 25. In this position, the requisite size of the stocking foot is determinable from the scales 27 and 28. The calf of the leg displaces the plate 21 and arm 19 outwardly from the guide 24, thereby turning the shaft 8 and rocking the arm 22 so that its pulley 23 will press against and displace the wire 13, as indicated by the dot and dash lines in Figs. 4 and 5. This application of tension to the wire 13 draws the indicator 17 toward and under the transparent strip 18 proportionately to the girth of the calf. The handle 12 is then lifted along the leg until a desired garter position is reached, thereby applying additional tension to the wire 23 and drawing the indicator 17 further under the transparent strip 18 proportionately to the upward movement of the arm 12 to the desired garter position.

The resultant position of the indicator 17 with respect to the "Deb," "Mid," or "Long" sections of the sight gauge 18 provides a composite indication of which of the available stocking leg lengths will best cover the leg area of a desired length of the person being measured without undue stretch or undue looseness of the leg fabric.

Having described our invention, we claim:

A meter comprising a substantially triangular base, a pillar projecting upward from said base adjacent to one corner thereof, a reel connected with said base adjacent to a second corner thereof, a guide connected with said base adjacent to a third corner thereof, an oscillatory shaft concentric with said pillar and having an arm projecting therefrom above said base and a second arm projecting therefrom below said base, a rod slidable along said shaft, a connector connecting said rod and reel and operatively associated with said guide and said second arm, and an indicator movable by said connector, said connector being movable by the movement of said rod and the movement of said second arm.

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RUSSEL K. BOADWEE.

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