

No. 616,493.

Patented Dec. 27, 1898.

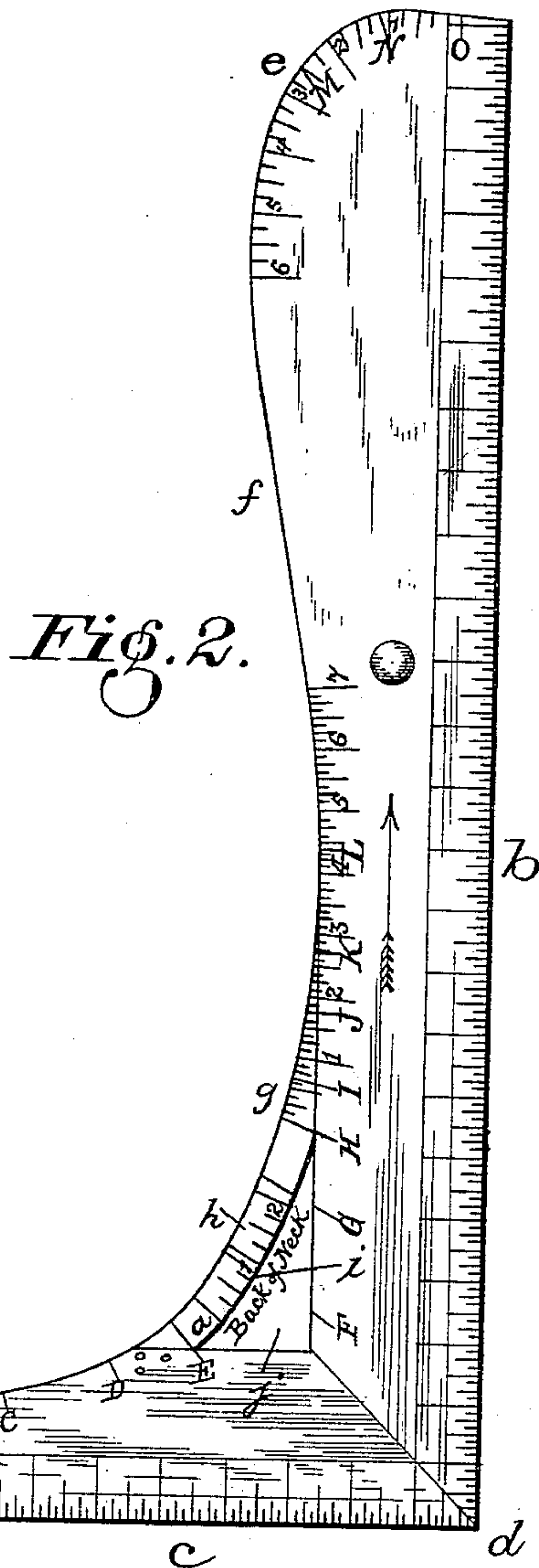
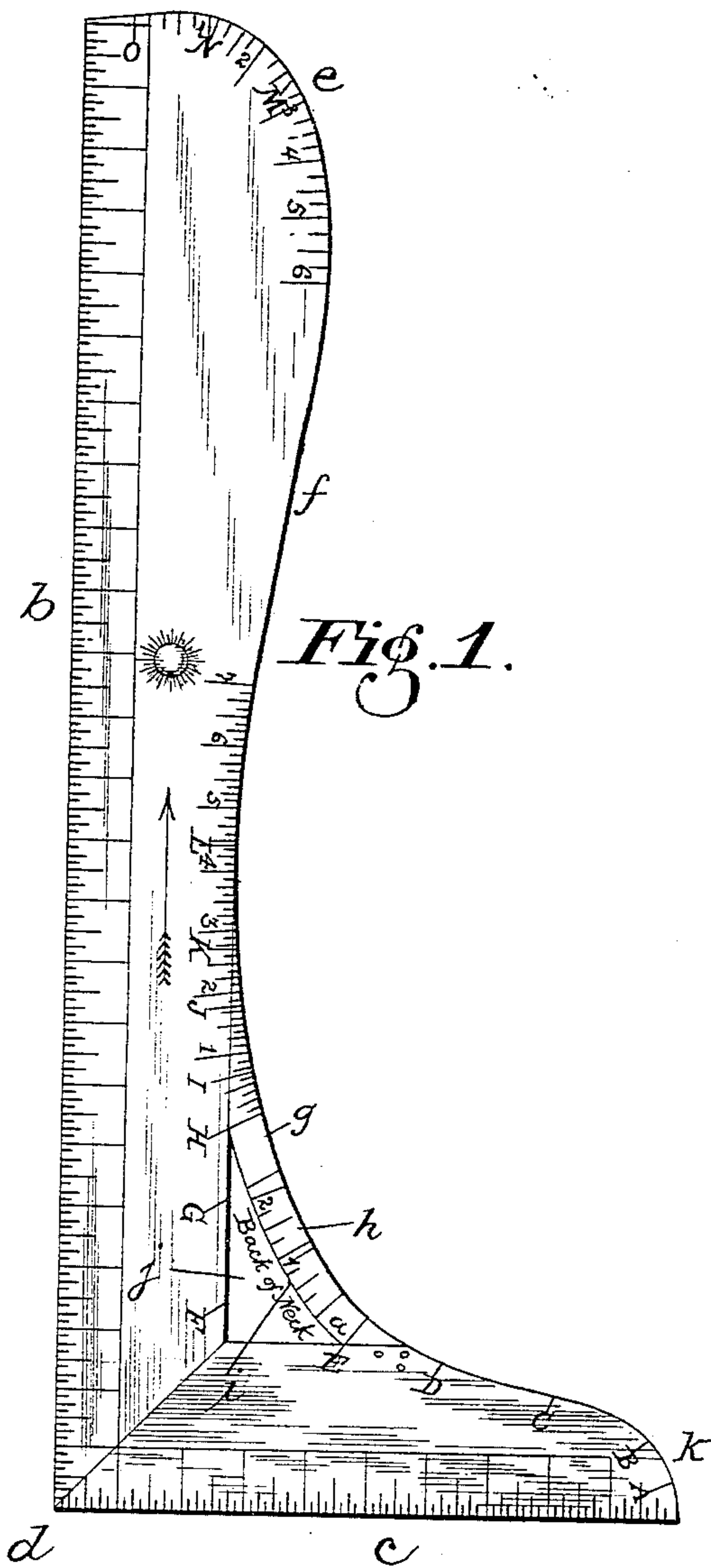
E. M. & J. L. RICHARDSON.

COMBINED SQUARE AND CURVE FOR CUTTING GARMENTS.

(No Model.)

(Application filed Feb. 3, 1898.)

2 Sheets—Sheet 1.



WITNESSES:

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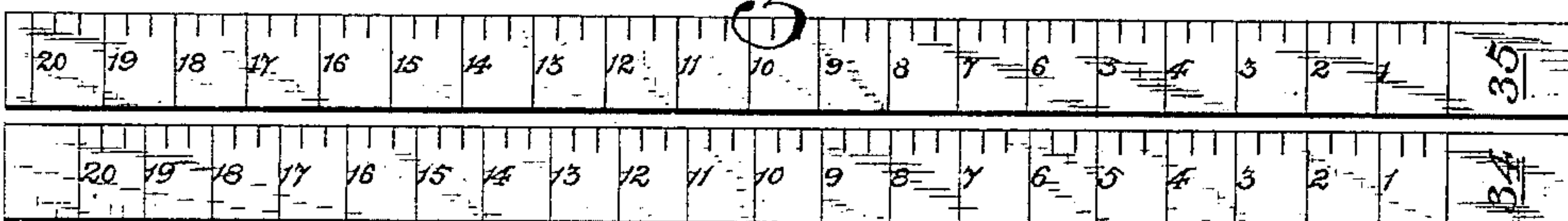
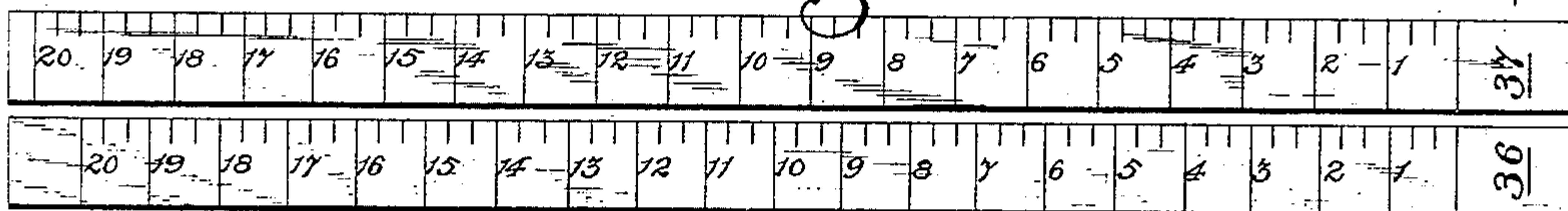
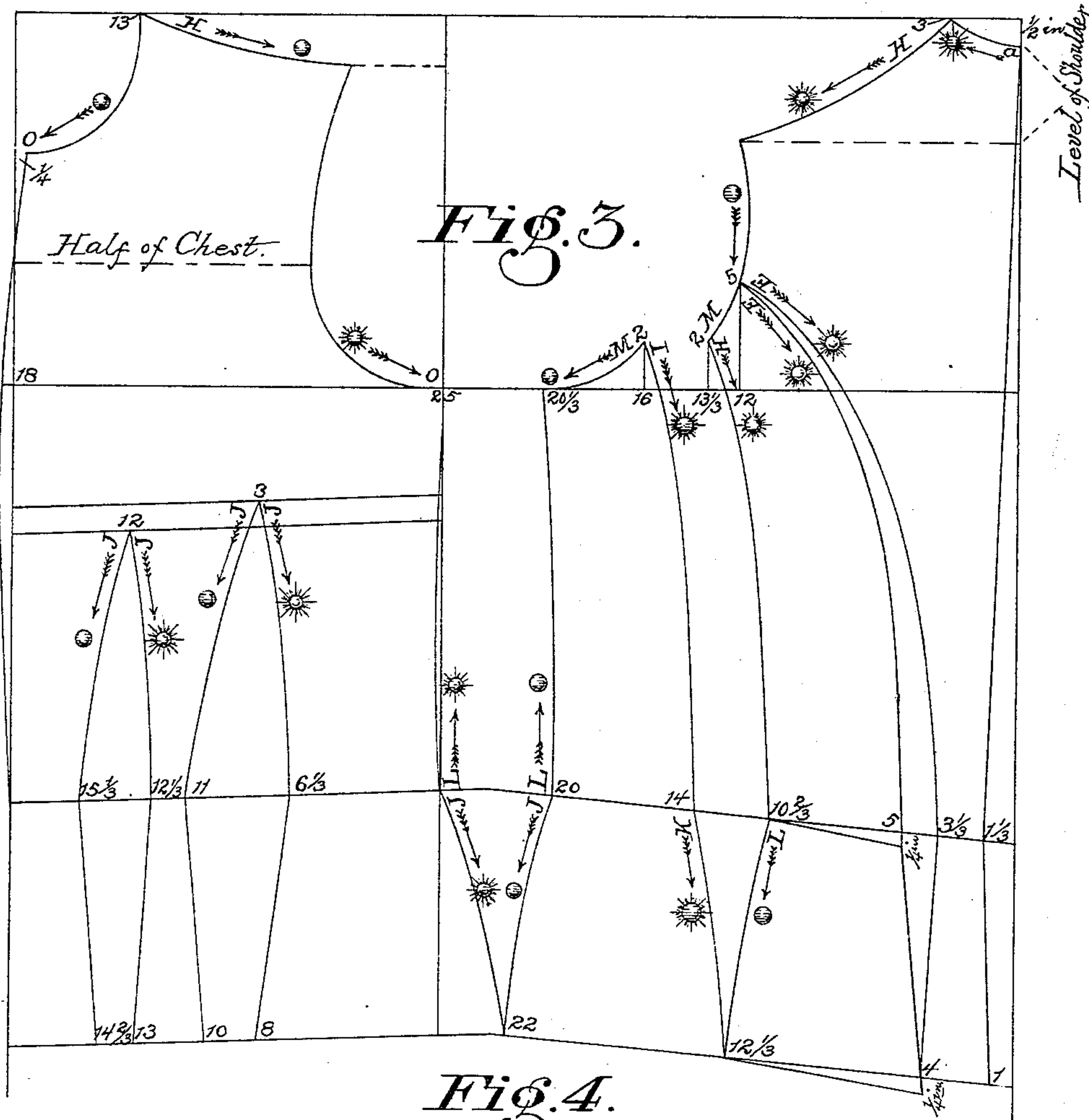
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2 Sheets—Sheet 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ELLA M. RICHARDSON AND JOHN L. RICHARDSON, OF HUNTINGTON,  
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## COMBINED SQUARE AND CURVE FOR CUTTING GARMENTS.

SPECIFICATION forming part of Letters Patent No. 616,493, dated December 27, 1898.

Application filed February 3, 1898. Serial No. 668,923. (No model.)

*To all whom it may concern:*

Be it known that we, ELLA M. RICHARDSON and JOHN L. RICHARDSON, citizens of the United States, residing at Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in a Combined Device and Tailors' System of Cutting Garments; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to combined devices and tailor system of cutting garments to be used by dressmakers and tailors; and it consists of certain devices and methods of construction, as will be more fully described hereinafter and pointed out in the subjoined claims, according to the statutes made and provided therefor.

The objects and advantages sought and attained by our invention are, first, to provide devices and a system of cutting garments to fit the human form that will be applicable as well to males as females; second, to provide a guide or system by which cutters may get more perfect results than have heretofore been attained in cutting garments, and although designed more especially for ladies' and children's apparel can be used equally as well for gentlemen's garments, and, third, to design a system and devices that will more fully draft a diagram for cutting garments on lines peculiar to the measures taken upon the form and that will operate in perfect harmony with the fixed and mutable laws of the human construction, being based on principles that are governed by the measures taken upon the human figure and deviate as desired, according to the measurements taken of forms of different persons.

We have found by a practical experience that the devices and systems now in use for cutting garments are not based upon any scientific systems or principles and lack the advantages as stated in the above objects.

Referring to the accompanying drawings, illustrating our invention, and in which simi-

lar letters of reference indicate like parts throughout all the several views, Figures 1 and 2 are plan views of the two opposite sides of our combined square and curve. Fig. 3 is an illustration of a diagram for cutting a garment as drafted with our improved devices from measurements taken according to our system, with the signs or symbols and letters similar to those marked on the combined square and curve for indicating its use, also the numerals which correspond to the divisions marked on the graduated scales. Fig. 4 are views of the two opposite sides of one of the graduated scales, being Nos. 36 and 37 and having the gradual increased divisions marked thereon. Fig. 5 are views of the two opposite sides of one of the graduated scales, being Nos. 34 and 35 and having the gradual increased divisions marked thereon and being the scale following consecutively in order to the one shown in Fig. 4.

Our combined square and curve (see Figs. 1 and 2) we preferably construct of boxwood or other suitable material, formed with a long arm having a straight edge *b* and a short arm having a straight edge *c*, which meet at an angle or point *d*, so as to form a perfect right angle or square. Said straight edges have marked thereon their entire length the standard inch and its divisions for the purpose of laying off the straight lines and measurements thereof in drafting the desired garment—for example, as illustrated by the diagram shown in Fig. 3 of the drawings. The end of said long arm, beginning at a point approximate to its straight edge *b*, is formed into a convexed curve *e*, having marked thereon the standard inch and its divisions for the purpose of securing the measurements desired in drafting the front neck-curve. This said convexed curve *e* is continued in a very slightly curved or nearly straight edge *f*, which terminates in a concaved curve *g*, the greater length of which is formed by means of an arm *h*, constructed of any suitable metal, properly connected to the combined square and curve. Concaved curve *g* has marked thereon the standard inch and its divisions, which are carried to a short distance on the metallic arm *h*, for the purpose of securing the shoulder measurements. The



opposite edge of said metallic arm is formed into a convexed curve *i*, upon which for a limited space are marked the standard inch and its divisions for the purpose of securing the measurements of the curve of the back of neck. Between said convexed curve *i* and the combined square and curve proper is formed an opening *j* for the purpose of utilizing the convexed curve *i* in drafting the diagrams. Said concaved curve *g* unites with a short convexed curve *k*, which forms the end of said short arm of the square.

The letters "O," "N," "M," "L," "K," "J," "I," "H," "G," "F," "E," "D," "C," "B," "A," and "a" are marked upon the convexed curve *e*, concaved curve *g*, short convexed curve *k*, and convexed curve *i*, so as to indicate which part of these curves are to be used in drafting the diagram from which the desired garment is to be cut, and for the purposes of illustration we have shown corresponding letters to indicate like parts in the drawing of the diagram illustrated in Fig. 3.

The arrows stamped upon each side of the combined square and curve, as shown in Figs. 1 and 2, are for the purpose of indicating the manner of using said combined square and curve and the direction for securing a given curve, and for the purpose of better illustrating the use of this symbol we have indicated a corresponding arrow or spear in the diagram illustrated in Fig. 3.

The representations of the sun in Fig. 1 and a full moon in Fig. 2 are to indicate which side should be placed up in using the combined square and curve, and for the purpose of better explaining the use of these symbols we have shown a sun and a moon in the diagram illustrated in Fig. 3.

In Fig. 3 of the drawings we have shown as an illustration of the practical application of our devices and system for drafting a diagram from which a garment is to be cut a waist the measurements of which have first been taken from the human form with a tape-measure in the usual manner and applied according to our method, except in securing the level of the shoulders, which is by direct measurement by placing a tape across the back from shoulder-point to shoulder-point and then measuring from nape of neck down to this tape-line across the back.

In Figs. 4 and 5 of the drawings we have shown two of our graduated scales, which are made in strips of durable material, preferably leatherette, said scales consisting of seventeen (17), on each side of which are marked graduated spaces, being designated by a number on one end of each scale. The full set of scales begin with No. 20 and end with No. 53, and for convenience of illustration we have here shown graduated scales Nos. 34, 35, 36, and 37. Each of said numbered scales is divided into twenty (20) spaces and each space subdivided into thirds, (3rds,) these scales having a common increased dif-

ference one over the other (from No. 20 to No. 53) of five-eighteenths ( $\frac{5}{18}$ ) of an inch, the increase in the spaces of one numbered scale over the spaces in the preceding numbered scale being one seventy-second ( $\frac{1}{72}$ ) of an inch—as, for example, in Fig. 5 of the drawings the increase of the spaces from "1" to "20" in scale No. 35 being one seventy-second ( $\frac{1}{72}$ ) of an inch over the spaces from "1" to "20" in scale No. 34.

The object of our graduated scales is to avoid the tedious and annoying mathematical calculations in the numerous imperfect systems for cutting garments in present use by simplifying the art of applying the measurements from the developments as taken to the drafting of the diagram.

The number of the scale to be used in drafting the diagram for the garment illustrated in Fig. 3 is ascertained by the number of inches in taking the breast measure—as, for example, say the breast measure has been found to be thirty-seven inches, then graduated scale No. 37 is used to secure the developments of the entire diagram to be drafted, the said developments being regulated by the measures previously taken of the person to be fitted. The measures used in the diagram shown in Fig. 3 of the drawings for the purposes of illustration are as follows, to wit: breast, waist, level of shoulder, scye depth, length of back, entire length, length of front, under arm, shoulder, width of chest, and neck. The numerals used on the diagram illustrated in Fig. 3 (except those marked fractions of an inch) denote the corresponding number of spaces on the scale to be used.

Having now described our combined devices and tailor system of cutting garments, what we claim as our invention, and desire to secure by Letters Patent, is—

1. A combined square and curve for drafting diagrams from which garments are to be cut, having certain symbols or signs marked on their sides or faces which, in connection with similar symbols or signs on the diagram, indicate the manner of using, and comprising a long and short arm, each having a straight edge forming an angle or square, their opposite edges formed by a convex curve terminating in a nearly straight edge and uniting with a concave curve partially formed by a curved arm; said concave curve uniting with a short convex curve, substantially as specified.

2. A combined square and curve for drafting diagrams for garment-cutting, having certain symbols or signs marked on their sides or faces, which, in connection with corresponding symbols or signs on the diagram, indicate the manner of using; and comprising a long and short arm each having a straight edge forming an angle or square; their opposite edges formed by a convex curve terminating in a nearly straight edge which unites with a concave curve partially formed by a curved arm (having its opposite edge con-



5 vexed); said concave curve uniting with a short convex curve; said curves having letters marked thereon in connection with similar letters on the diagram so as to give location of certain curves, substantially as specified.

10 3. A combined square and curve for drafting diagrams for garment-cutting, having certain symbols or signs upon their sides or faces which, in connection with corresponding symbols or signs on the diagram, indicate the manner of using; and comprising a long and short arm each having a straight edge forming an angle or square; their opposite edges  
15 formed by a convex curve terminating in a nearly straight edge which unites with a con-

cave curve partially formed by a curved arm (having its opposite edge convexed); said concave curve uniting with a short convex curve; said curves having letters marked thereon in connection with similar letters on the diagram so as to give location of certain curves; the whole having the standard inch suitably marked thereon; all substantially as specified. 20

In testimony whereof we affix our signatures in presence of two witnesses. 25

ELLA M. RICHARDSON.

JOHN L. RICHARDSON.

Witnesses:

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FRED T. LOFTIN.