

(No Model.)

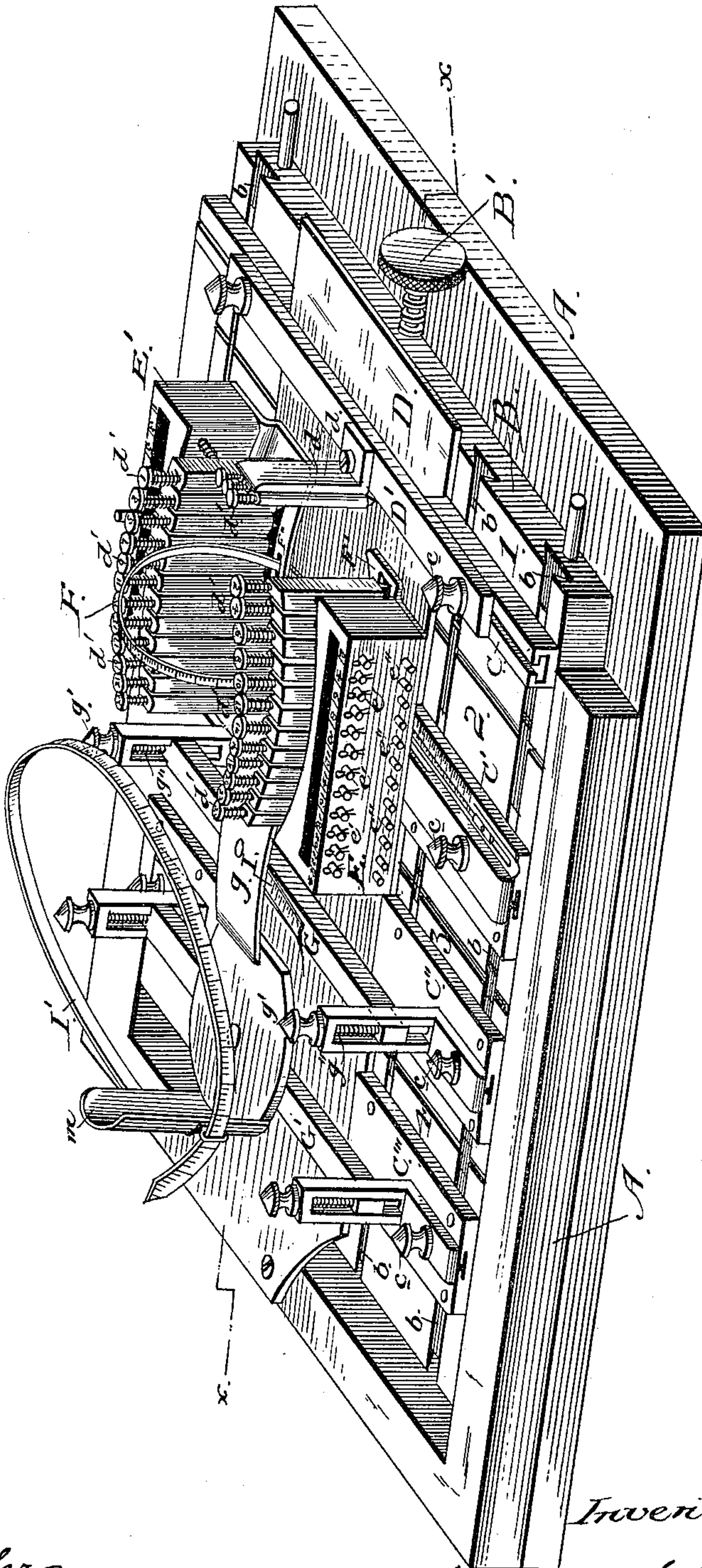
2 Sheets—Sheet 1.

A. S. ADLER.  
SHOE MAKER'S MEASURE.

No. 365,221.

Patented June 21, 1887.

*Fig. 1.*



*Attest:*  
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*Inventor:*  
*Abraham S. Adler*  
*per Atty. A. H. Evans & Co*

(No Model.)

2 Sheets—Sheet 2.

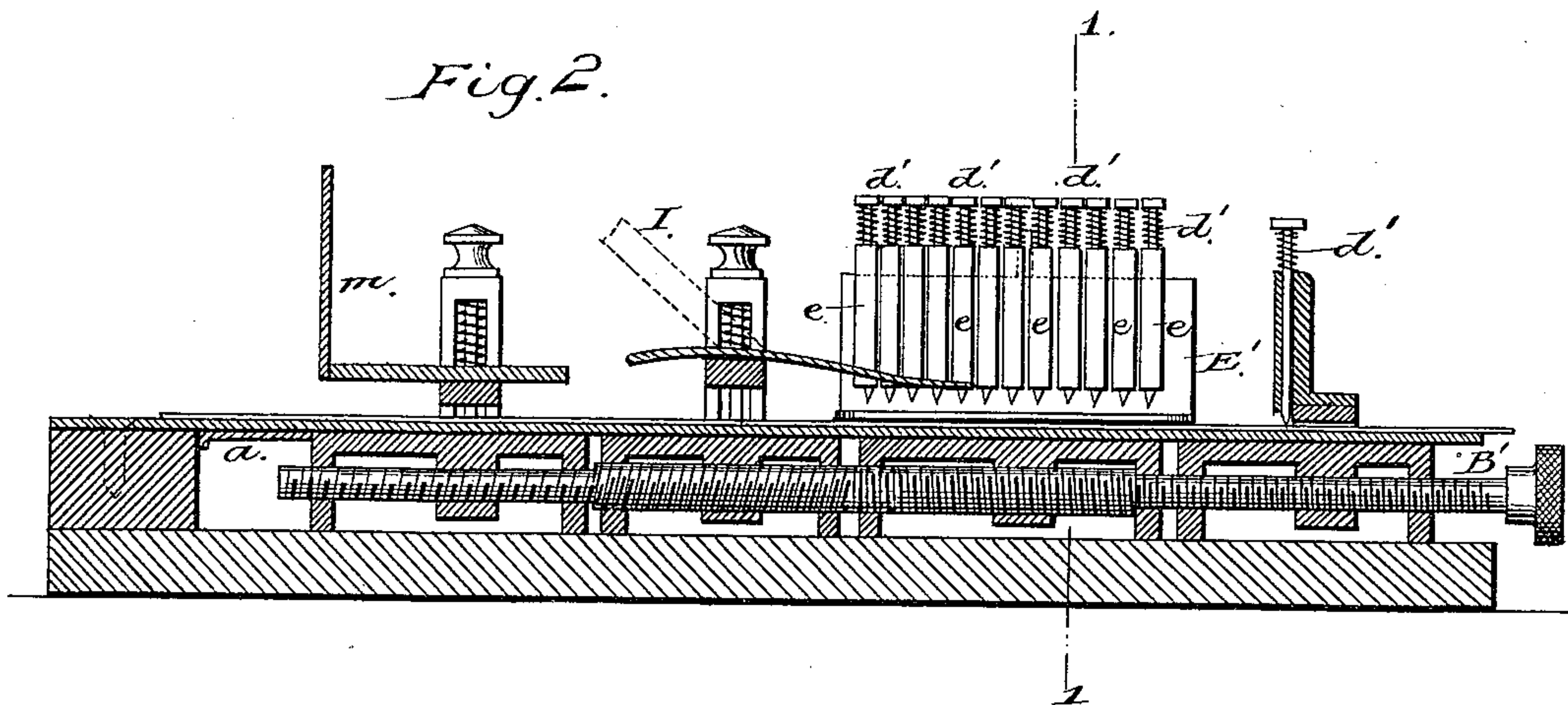
A. S. ADLER.

SHOE MAKER'S MEASURE.

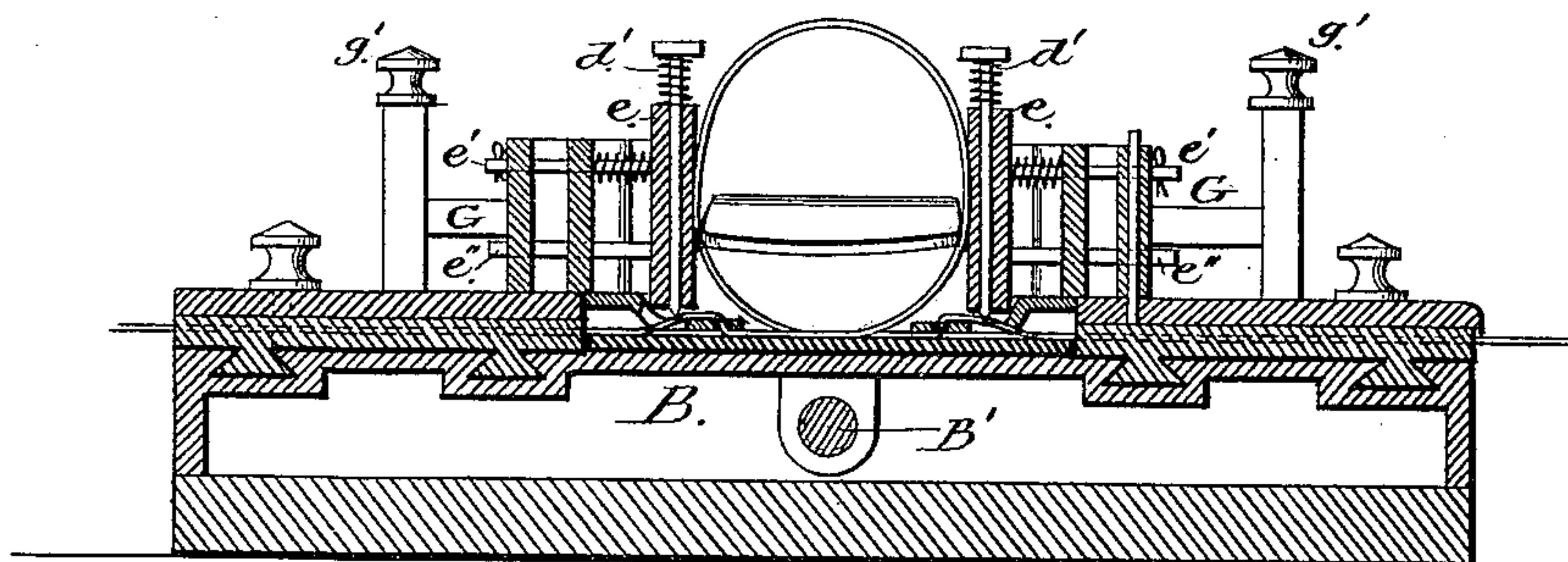
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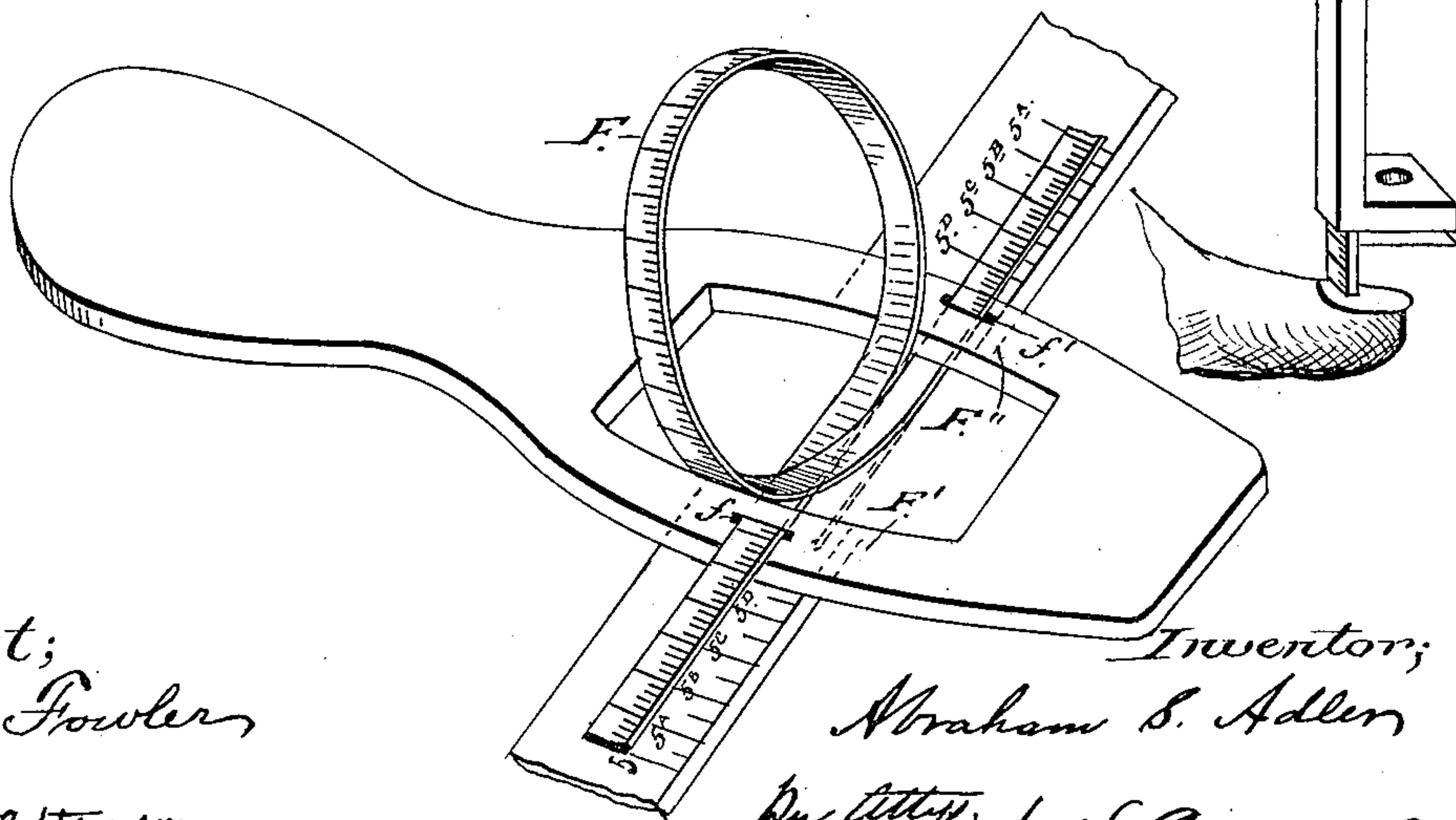
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

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# UNITED STATES PATENT OFFICE.

ABRAHAM S. ADLER, OF BALTIMORE, MARYLAND.

## SHOE-MAKER'S MEASURE.

SPECIFICATION forming part of Letters Patent No. 365,221, dated June 21, 1887.

Application filed September 30, 1886. Serial No. 214,981. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAHAM S. ADLER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a new and useful Improvement in an Apparatus for Grading the Soles and Uppers of Shoes and Taking the Correct Measure of the Foot, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of an apparatus for grading shoes and measuring feet, with my improvements attached. Fig. 2 is a longitudinal section through  $xx$  of Fig. 1. Fig. 3 is a transverse section through  $11$  of Fig. 2. Fig. 4 shows the application of measure for grading the uppers and bottoms separately and jointly. Fig. 5 shows the vertical scale-rod with measure attached.

My present invention relates to an apparatus for taking the correct measure of the foot and for grading the soles and uppers of shoes, and is an improvement on Patent No. 341,204, issued to me May 4, 1886; and it consists in the several combinations of devices hereinafter described and claimed.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the exact manner in which I have carried it out.

In the drawings,  $A$  represents the frame in which the apparatus is placed, and to which the rear or heel section of the bed is rigidly attached by means of the plate  $a$ , or by any other convenient and well-known means.  $B$  represents the bed of my apparatus placed within the frame  $A$ , and divided into sections 1, 2, 3, and 4, as plainly shown in Fig. 1 of the drawings, and as shown and described in my former patent, the said sections being held in position and operated by the screw  $B'$  of varying pitch, as claimed in the patent referred to, and for the purpose therein explained. The ends of each section of the bed are provided with two parallel dovetailed grooves,  $b$ , for adjustably securing the parallel transverse plates  $C C' C'' C'''$ . These plates  $C C' C'' C'''$  are in turn slotted longitudinally, to secure the screws  $c$ , by means of which the lateral adjustment of the several parts of the apparatus is secured, as will now be explained.

On plates  $C$  is laterally adjusted the toe-plate  $D'$ , near the longitudinal center of which is secured a vertical arm,  $d$ , with one or more sleeves in which move the spring-pins  $d'$ . By pressing down the pins they will mark the toe-line on the diagram and give the size, as will be hereinafter explained.

On plates  $C'$  are laterally adjusted the devices for marking the exact contour of the sides of the foot. These devices are composed of metallic blocks  $E$  and  $E'$ , of peculiar shape, as shown in Figs. 1, 2, and 3 of the drawings. The blocks are provided with a graduated scale on their outer top edges, and are perforated transversely to receive two parallel rows of horizontal pins,  $e' e''$ , projecting from the vertical bars  $e$ , the pins  $e'$  of the upper row in each block being provided with coiled springs, as shown in Fig. 3 of the drawings. Each of the vertical bars  $e$  carries a sleeve in which freely slide spring-pins  $d'$ , like those in the toe-piece, before described. These pins are marked with numbers, the even numbers on the one side and the odd numbers on the other side, so as to show exactly where any irregularity in the shape of the foot occurs.

It is evident from this description of the blocks  $E E'$ , with their arrangement of spring-bars, that the vertical bars  $e$  will align themselves exactly with the contour of the foot placed on the floor or foot-rest  $D$ , with the heel against the heel-piece  $m$  and the toe in position against the toe-piece. While the foot is in this position the spring-pins  $d'$  are all pressed down, with their sharp points marking on the diagram, (as covered in my Patent No. 322,238,) placed upon bed-plate under the foot, the exact shape of the outline of the foot at those points which must be taken into account and accommodated, in order to secure ease and comfort in the shoe.

The block  $E$ , which is placed against the outside of the foot, is swiveled on its adjustable slide, while the block  $E'$  may be swiveled or not, as may be desired. These slides are made interchangeable, so that the blocks may be changed and either foot be fitted in the apparatus. While the device thus far described will grade correctly the length or number of the foot and the width of the sole, it would be very incomplete if it did not also grade the size or number of the upper. To provide for this, I



place on each end of the plate C' a measuring-scale, the one side showing the different sizes of the shoe and the other side determining the grade of the upper. The end of the flexible measuring-strap F is first applied to, say, Fig. 5, if a No. 5 shoe is needed. The measure is then passed down through a slot, *f*, made through the plate F', representing the outer sole of the shoe, then under and over the foot, and drawn up through slot *f'* in the plate F'' on the opposite side, and the end of the measure placed on the scale on the end of the other plate, C', for grading the upper. The operator readily determines by drawing the measure whether the measure indicates a 5 B, or 5 C, or a 5 D. The space between the plates F' and F'' indicates the shape and size of the inner sole of the shoe, while the outer edges of these plates indicate the outer sole.

On the plates C'' is placed an adjustable bar, G, carrying a thin spring-metal plate, *g*, which fits in the hollow of the foot, and by pressing upward against the foot keeps the flesh of the foot in position for a proper measurement. This plate *g* also represents a portion of the inner sole of the shoe.

The bar G is rendered adjustable by means of the thumb-screws *g'* and springs *g''*. On the bar G, and on one side of the thin plate *g*, I secure a suitable graduated flexible scale-strap, I, for measuring the instep. This strap is brought above and around the foot and carried to the opposite side of the plate *g*, when the figure of the strap will properly indicate the grade or size of the upper at that point.

On the plate C''' is placed an adjustable bar, G', for adjusting the height of the heel, and at a central point on this bar I secure the vertical heel-piece *m*. At the central point, in the rear of this heel-piece, I secure one end of a flexible measuring-strap, I', similar to the strap I. This strap is to be passed over and around the upper portion of the foot and back to the starting-point, where the graduated scale on the strap will indicate the measure in the well-known way.

To determine the thickness of the foot at any point, I use a vertical scale-rod, X, as shown

in Fig. 5, which may be placed at any desired point of the bed of the apparatus, and by which the thickness of the foot is readily determined.

Having thus explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a shoe-maker's measure, the sectional bed-plate B and the adjustable plates C', in combination with the laterally-adjustable blocks E E', provided with a series of spring-actuated pins, *d'*, substantially as herein described.

2. The laterally-adjustable metallic blocks E E', having the spring-actuated pins *d'*, and the sectional bed-plate B, in combination with the laterally-adjustable toe-plate having spring-actuated pins, substantially as and for the purpose specified.

3. The sectional bed-plate B, the metallic blocks E E', and the adjustable toe-plate D', in combination with the adjustable bar G' and the heel-piece *m*, secured thereto, substantially as herein described.

4. The sectional bed-plate B, metallic blocks E E', and adjustable toe-plate D', in combination with the adjustable heel piece *m* and the adjustable bar G, provided with spring-metal plate *g*, all constructed to operate substantially as and for the purpose described.

5. The adjustable bar G, provided with the spring-metal plate *g*, in combination with the graduated flexible scale-strap I, for measuring the instep of the foot, substantially as herein described.

6. The sectional bed-plate B and the adjustable blocks E E', having the slots *f'*, in combination with the flexible measuring-strap F, engaging said slots, and the graduated plates C', substantially as herein specified.

7. The sectional bed-plate B, heel-piece *m*, and the flexible measuring-strap I', in combination with the bar G, spring metallic plate *g*, and flexible measuring-strap I, substantially as described, and for the purpose set forth.

ABRAHAM S. ADLER.

Witnesses:

W. H. PATTERSON,  
D. S. CLARK.