(No Model.)

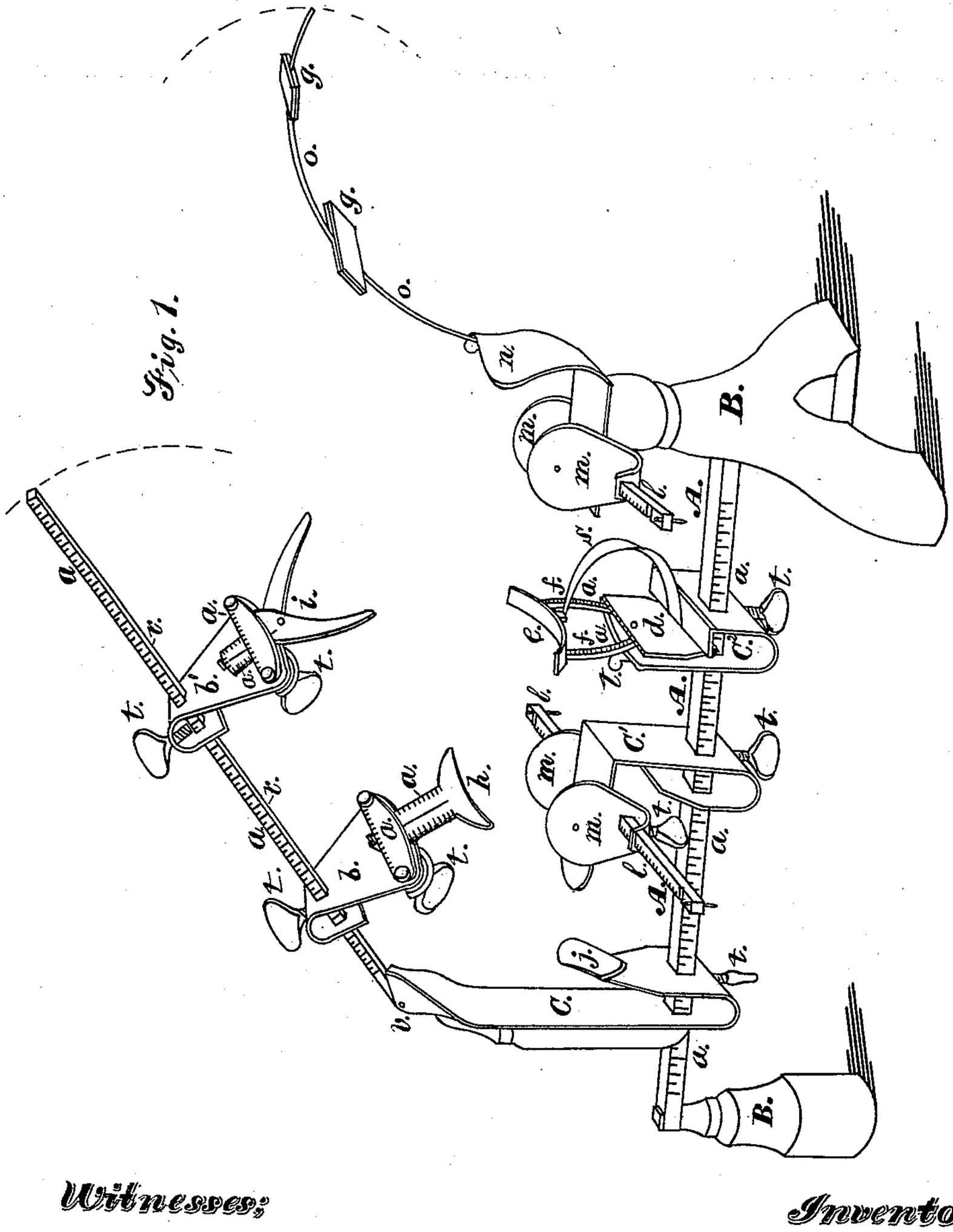
2 Sheets—Sheet 1.

C. A. WALLBERG.

FOOT MEASURE.

No. 250,406. Patented Dec. 6, 1881.

Fig. 1.



Witnesses;

George E. Coney

Arthur C. Brown.

Inventor;

Charles A. Wallberg

(No Model.) 2 Sheets—Sheet 2.

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FOOT MEASURE.

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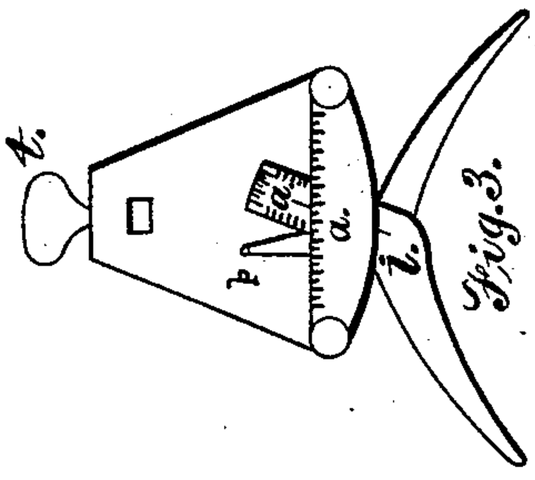

Fig. 3.

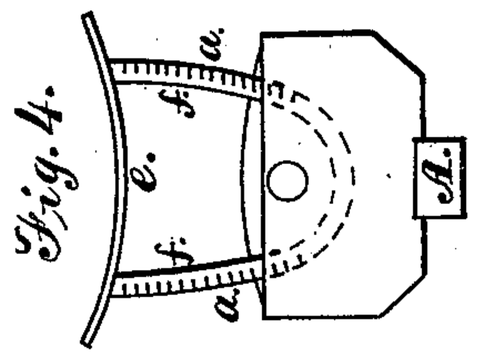

Fig. 4.

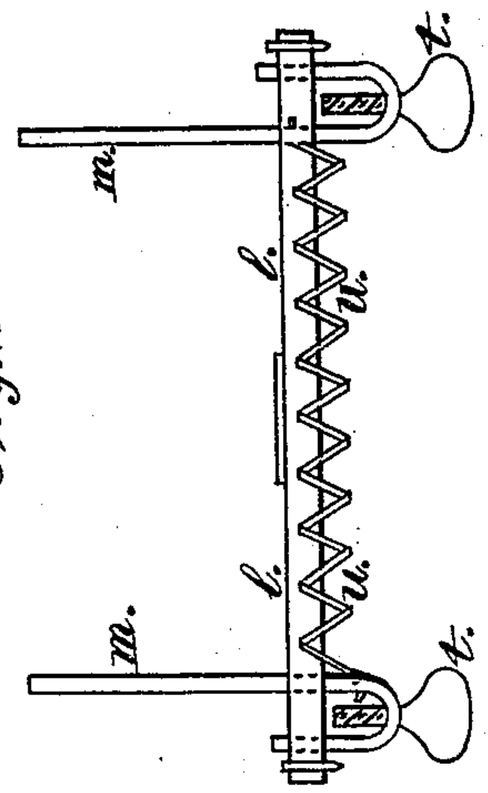

Fig. 2.

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UNITED STATES PATENT OFFICE.

CHARLES A. WALLBERG, OF NEW YORK, N. Y.

FOOT-MEASURE.

SPECIFICATION forming part of Letters Patent No. 250,406, dated December 6, 1881.

Application filed May 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. WALLBERG, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented a new and useful Foot-Measure or Foot-Conformator, of which the following is a specification.

Heretofore the usual method by which shoemakers have obtained the measure of the human foot is by the use of a measuring-rod with an adjustable sliding piece and a tape-measure; but this method is open to the objection that it does not give the shape of the foot as well as its size.

The object of my invention is to obtain by the use of a single machine all that could be obtained by the old method, and in addition thereto the shape of the foot, thus giving complete data from which the last can be made. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the complete machine. Fig. 2 is a sectional view of the measuring side pieces. Fig. 3 is a view of part used for measuring the instep, and Fig. 4 is a view of the part used for measuring the hollow of the foot.

Similar letters refer to similar parts throughout the several views.

The horizontal rod A and its standards B B constitute the frame of the machine, one of the standards B also carrying a heel-plate and ankle-rest, *n*. The rod A is about a foot in length, and is graduated by a scale, *a*. Upon this rod are the sliding pieces C, C′, and C², they being adjustable with reference to each other and the heel-plate *n*, and being secured in the position desired by the binding or thumb screws *t t*. The sliding piece C carries a toe-piece, *j*, which is to be placed against the end of the toe of the foot to be measured. The upper extremity of the sliding piece C carries a pivoted rod, *r*, turning upon the pivot *v*. The rod *r* is also graduated by a scale, *a*, and carries upon it the sliding pieces *b* and *b′*, *b* being adapted to give the thickness and shape of the foot forward of the instep, and *b′* being adapted to give its size and shape at the instep. The sliding piece C with the sliding pieces *b* and *b′* thus give the length of the foot, its thickness, and the shape of its upper surface, the pieces C′ and C² sliding upon the graduated rod A, and the heel-plate *n* being adapted to give the width of the foot and the height and shape of the hollow under the instep.

The construction of each of the adjustable parts of the machine is as follows:

b and *b′* consist of curved metal plates sliding upon the graduated rod *r*, and being held in the position desired by the binding-screws *t t*. Riveted to these curved plates, but leaving a small space between them, are small secondary plates, which serve to confine and hold in position the parts *h* and *i*. These small secondary plates have a scale cut upon their upper edges. Between the curved plate and secondary plate of the sliding piece *b* is a thin plate of metal bearing a segment at one end, the segment being designed to fit the curve of the foot, and the other end of this thin plate bearing a pin, which prevents it from escaping. It will thus be seen that this piece *h* has a free rotary, lateral, and perpendicular motion between its confining-plates, this motion being stopped at will by the thumb-screw *t*. The sliding piece *b′* is constructed similarly to the piece *b*, except that for the plate *h* in *b* there are substituted in *b′* two curved blades resembling those of a shears, and pivoted together, a small scale cut upon one of the blades at *a*, in connection with a pin, *p*, upon the other, Fig. 3, showing the extent to which the blades are separated. The motion of these blades, both with reference to each other and with reference to the secondary plate confining them, may be stopped by the thumb-screw *t*.

The sliding piece C′, which serves as a rest for the ball of the foot, and the heel-plate *n*, are provided with horizontal rods *l l*, which are graduated with a scale, and which run at right angles to the longitudinal rod A of the machine. Upon these rods *l l* are mounted sliding side pieces, *m m*, which are attached together by coiled springs *u u*, Fig. 2, the position of these sliding pieces *m m* upon the rods *l l* being governed by the thumb-screws *t t*. The rods *l l* have a groove at each end, into which the side pieces, *m m*, fall when spread apart to the extremities of the rods *l l*, and they are released by lifting them out of these grooves.

Pins at the extremities of the rods *l l* prevent the sliding pieces *m m* from passing over the ends of the rods.

The construction of the sliding piece C^2 is shown in Figs. 1 and 4 of the drawings. It consists of a curved plate mounted upon the rod A. Against one face of this curved plate is placed a secondary plate, *d*, and between these two plates there is an inverted stirrup, *f f*, mounted upon a curved flat spring, S, attached to the step of the stirrup. This stirrup has a free rotary, lateral, and perpendicular motion between its confining-plates, this motion being governed by the spring S and thumb-screw *t*, Fig. 1. The bow of the stirrup and the upper edge of the secondary plate *d* are graduated with a scale, thus enabling the operator to determine the height and slant of the step *e* of the stirrup in any desired position.

Attached to the heel-plate and ankle-rest *n* there is a steel spring, *o*, carrying sliding pieces *g g*, to which strings may be fastened to give the size of the ankle.

The operation of the machine is as follows: The foot to be measured is placed upon the heel-plate *n*, the stirrup *f e*, and the toe-rest C′, and the toe-piece *j* is then placed against the end of the toe. The length of the foot is then read off on the scale *a* on the rod A. C′ is then placed at different points of the foot forward of the instep, and the width of the foot measured by the side pieces, *m*, and the scale-bar *l*, the positions of C′ being noted upon the scale-bar A. The sliding piece C^2 is then placed at different parts of the hollow of the foot, its position being noted upon the scale-bar A, and the height of the hollow and slant of the sides of the foot are indicated by and noted upon the scales of the stirrup *f e* and the secondary plate *d*. The scale-bar *r*, with its riders *b* and *b′*, is then lowered and the measurement of the upper surface of the foot at various points is taken and noted upon the scales cut upon the riders *b* and *b′* with the pieces *h* and *i*, the position of the riders *b* and *b′* being noted upon the scale-bar *r*. The width of the heel is then measured by the side pieces, *m*, on the heel-plate *n* and the scale-bar *l*. The ankle may then be measured by the spring *o* and strings attached to the sliding pieces *g g*. The last is made from these data.

Having thus described the nature and use of my invention, what I claim is—

1. A foot measurer or conformator having a graduated bar carrying riders adapted to measure the size and shape of the foot, substantially as shown and described.

2. In a foot measurer or conformator, the combination of a graduated bar, A, heel-plate *n*, and riders C, C′, and C^2, with a graduated bar, *r*, and riders *b* and *b′*, substantially as shown and described.

3. In a foot-measurer, a graduated bar, A, in combination with a rider, C, carrying a toe-piece, *j*, and a pivoted bar, *r*, having sliding pieces thereon, *b* and *b′*, adapted to give the shape and size of the upper surface of the foot, substantially as shown and described.

4. In a foot-measurer, the combination of a graduated bar, A, with a rider, C′, provided with a graduated bar, *l*, and sliding pieces *m m*, attached together by a spring, *u u*, and adapted to measure the width of the foot, substantially as shown and described.

5. In a foot-measurer, the combination of a graduated bar with a rider, C^2, having a stirrup, *e f*, mounted on a spring, S, and provided with scales, substantially as and for the purpose set forth.

6. In a foot-measurer, a graduated bar, *r*, carrying a rider, *b*, provided with screws *t t*, and having a thin graduated plate, *h*, and secondary graduated plate, substantially as shown and described.

7. In a foot-measurer, a graduted bar, *l*, carrying riders *m m*, attached together by a spring, *u u*, in combination with a heel-plate, *n*, mounted upon one of the standards B, the whole being adapted to measure the size and shape of the heel, substantially as described.

8. In a foot-measurer, a graduated bar, *r*, carrying a rider, *b′*, provided with pivoted graduated blades *i* and a secondary graduated plate, and screws *t t*, substantially as shown and described.

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