

(No Model.)

3 Sheets—Sheet 1.

A. S. ADLER.
SHOEMAKER'S MEASURE.

No. 546,287.

Patented Sept. 17, 1895.

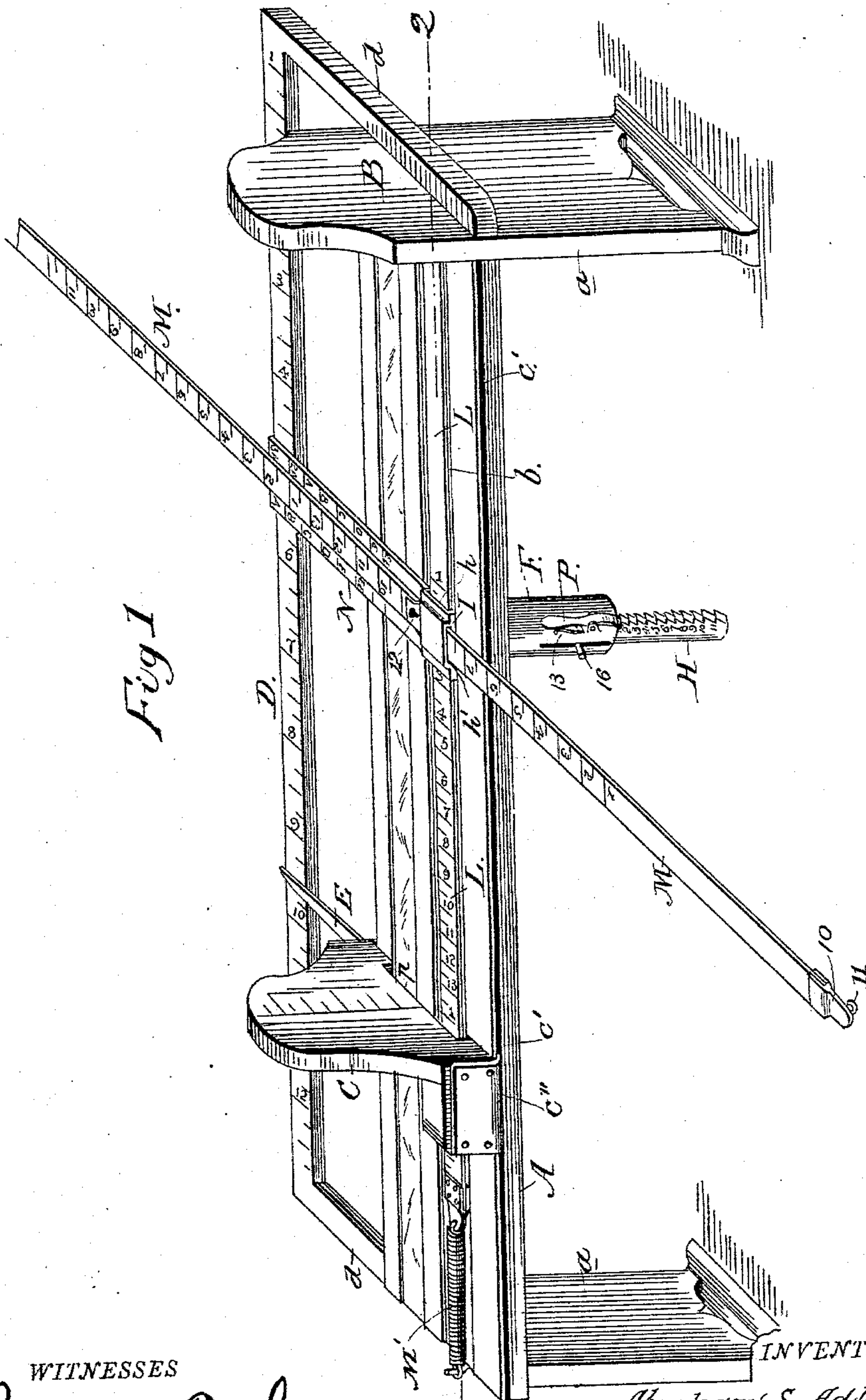


Fig 1

WITNESSES

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his Attorney

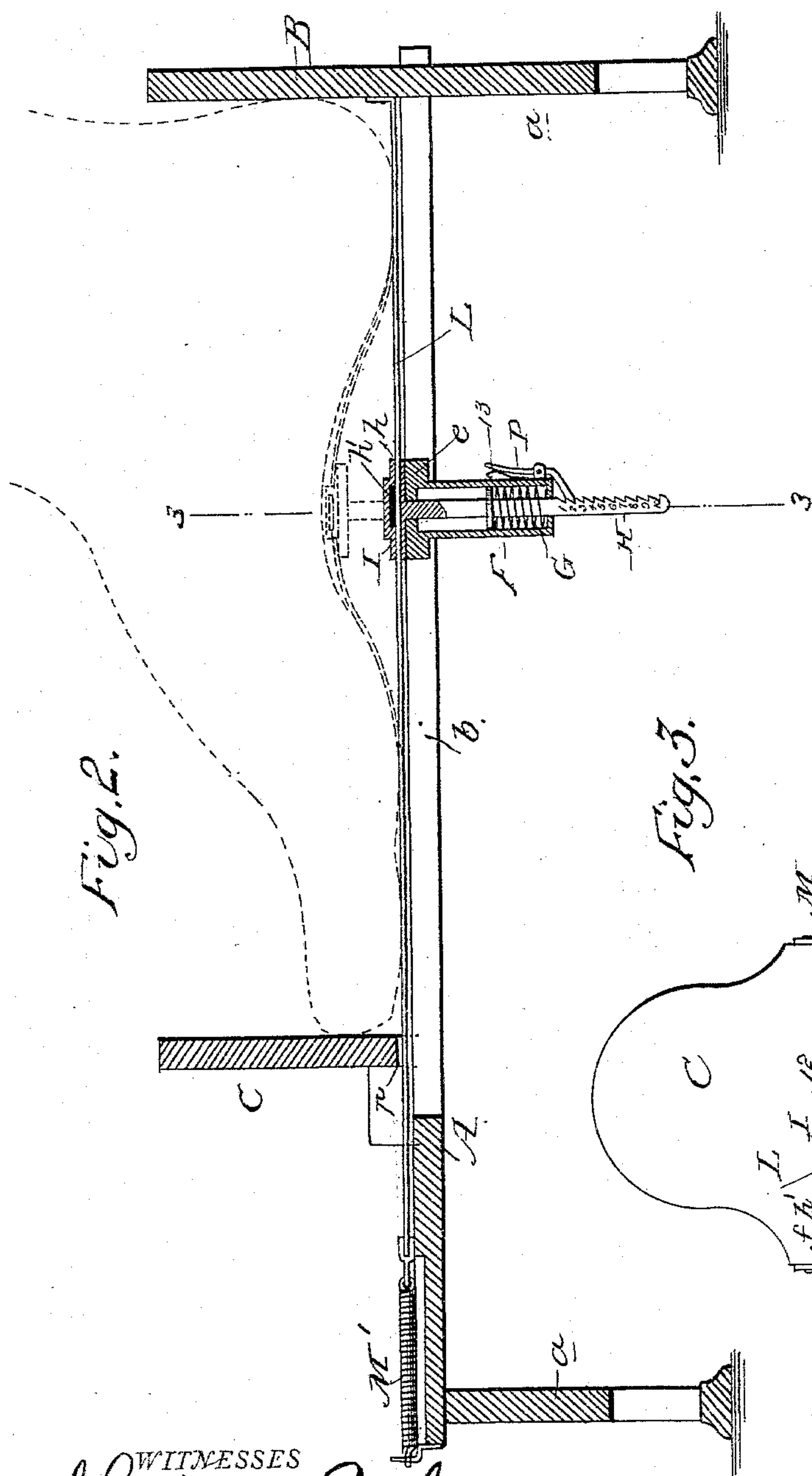
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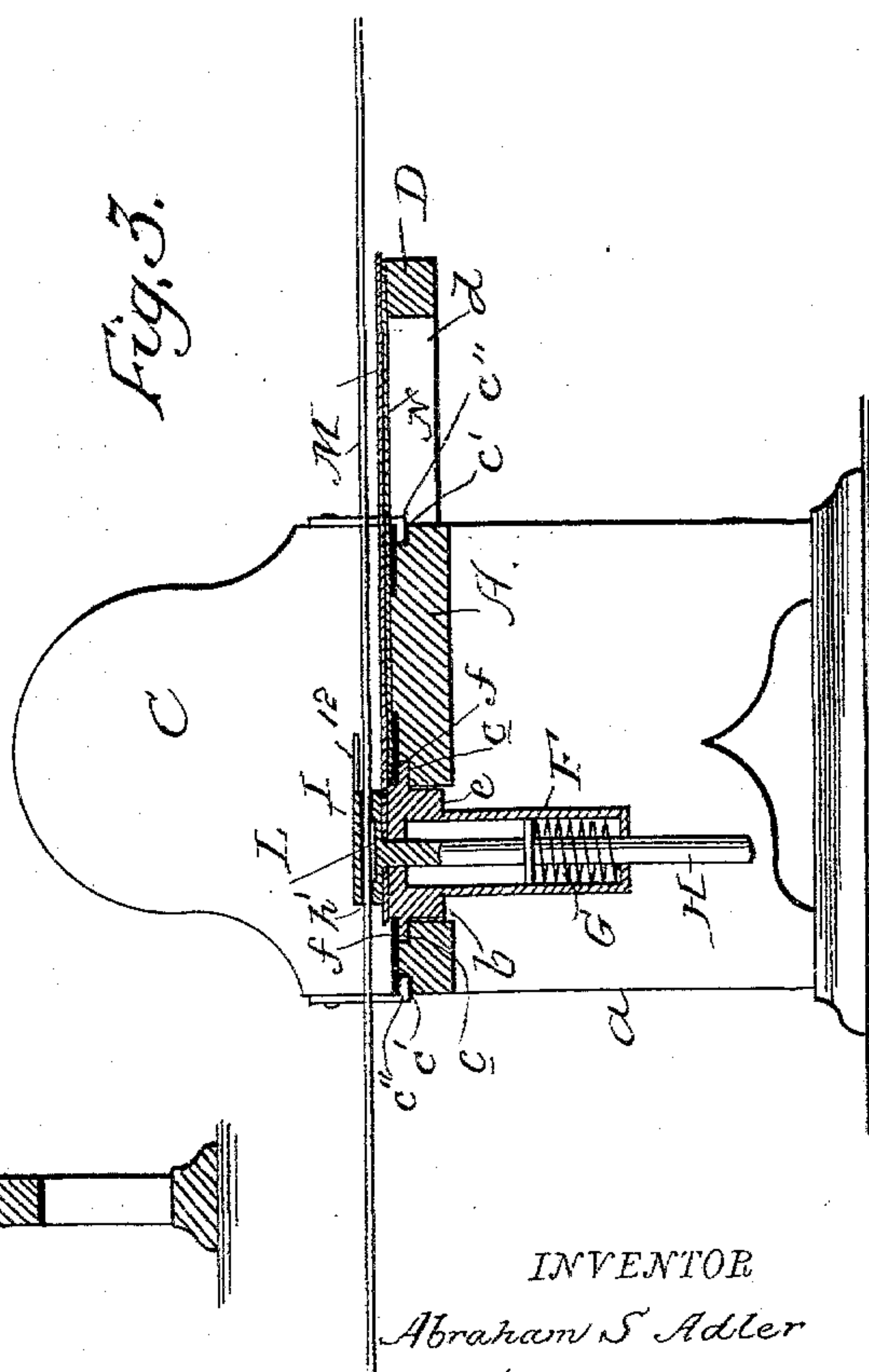
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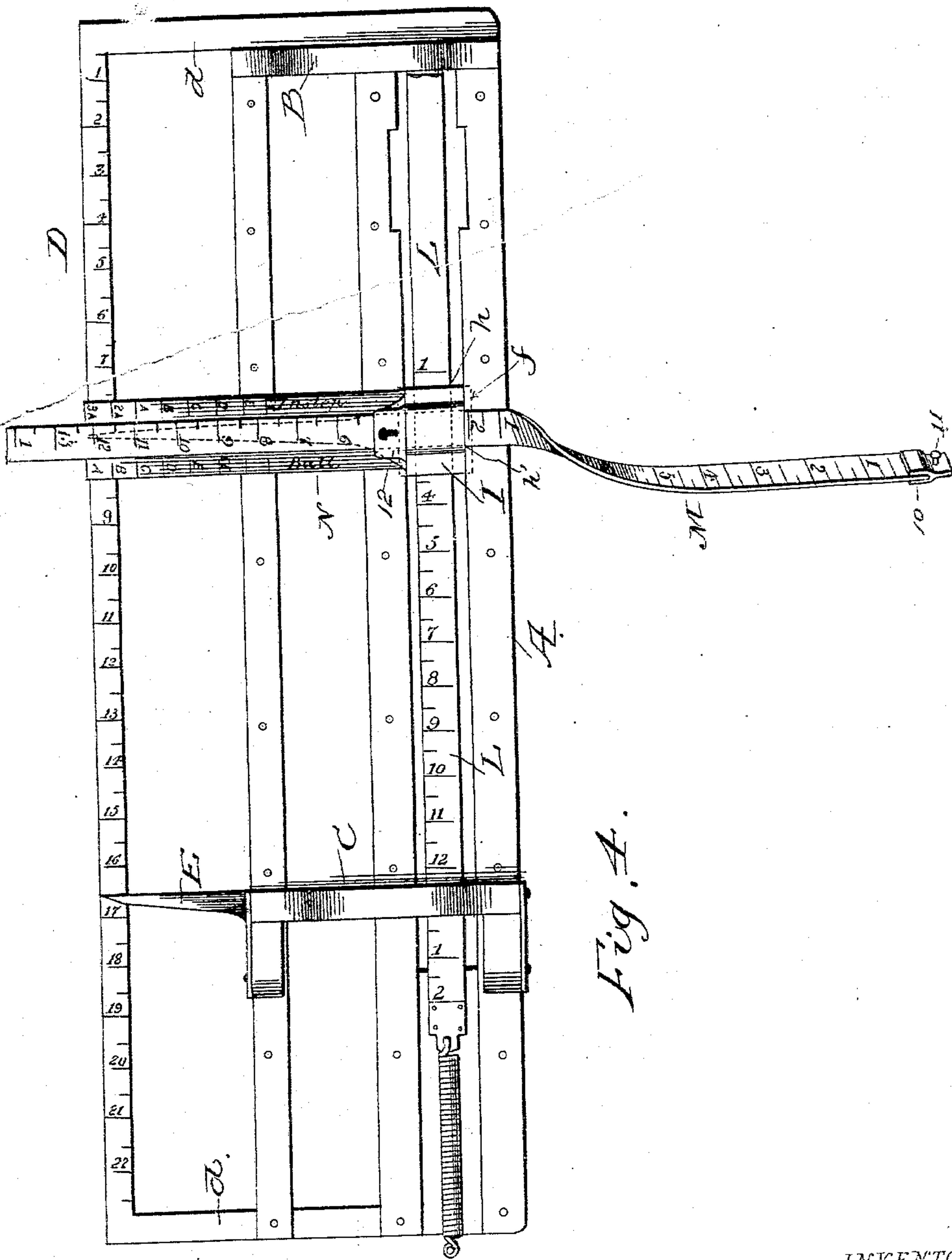


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SHOEMAKER'S MEASURE.

SPECIFICATION forming part of Letters Patent No. 546,287, dated September 17, 1895.

Application filed January 16, 1895. Serial No. 535,144. (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 certain new and useful Improvements in Shoemakers' Measures; and I do hereby 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.

My invention relates to certain new and useful improvements in machines adapted especially for the measurement of the human foot and to assist shoe dealers in quickly and accurately ascertaining the correct size in length and width of any foot and whether such foot requires a shoe with a low or high heel to make it comfortable to the wearer, and my invention consists of the parts and the constructions and combinations of parts which I shall hereinafter fully describe, and specifically point out in the claims.

Figure 1 represents a perspective view of a shoemaker's measure embodying my invention. Fig. 2 represents a longitudinal sectional view of the machine on the line 2 2 of Fig. 1, and showing in dotted lines a human foot in position ready to be measured. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2. Fig. 4 is a top plan view.

In the said drawings, A represents a base or support constructed of suitable material and in any well-known and appropriate manner to make it attractive, and of sufficient strength to sustain a foot placed thereon. This base is supported upon legs or standards *a*, and through it is made a longitudinal slot or opening *b*, which extends a considerable distance, and whose side walls are provided with channels or guides *c*, for a purpose I will hereinafter indicate.

At or near one end of the base A is rigidly fixed a standard or heel-piece B, which in the present instance is formed by extending one of the end standards *a* above the plane of the top of the base, as shown. On the opposite end portion of the base is a toe-piece C, which is adapted to slide back and forth in guides *c'*, engaged by tongues *c''*, projecting inwardly from the toe-piece. This toe-piece, if desired, may have its inner face graduated in the usual or any well-known manner to indicate

the measurement of the toe of any foot placed upon the base between the heel and toe pieces, with the latter adjusted closely against the end of the toe and with the heel firmly seated against the heel-piece, as is customary in shoemakers' measuring-sticks and similar devices.

From suitable arms or brackets *d*, projecting from the base A, is supported a bar D, or if preferred a plate, the surface of which is graduated in inches and fractions thereof, the purpose of which bar being, in connection with a movable pointer hereinafter mentioned, to quickly indicate a central point between the heel and toe pieces.

From the slidable toe-piece there projects a laterally-extending rod, bar, or plate E, whose outer end is designed to travel over the face of the graduated bar D to serve as a pointer for indicating in inches and fractions the length of the foot or shoe that has been properly seated with the toe-piece adjusted against it, as before described. A tube or sleeve F depends from the base A and has at its upper end a head *e*, with side flanges or lugs *f*, adapted to engage and travel in the guides or channels *c*, whereby the tube or sleeve is suitably suspended and adapted to travel back and forth in the slot or guideway *b*. Within the tube or sleeve F is placed a spring G, which acts upon a rod H, also passing through the tube or sleeve and carrying at its upper end above the tube a plate or head I, which is channeled, slotted, or otherwise formed with a longitudinally-extending guide *h* and a transversely-extending guide *h'*, each of which guides receives a measuring-strap in such a manner that the straps may be pulled freely through them, for purposes I will now disclose.

The flexible measuring-strap L is preferably a thin metal blade, covered or not, as desired, and has one of its ends secured rigidly to or near the heel-piece B, and thence extends longitudinally along the top of the base over the slot *b* therein, and has its opposite end yieldingly connected to the base by means of an elastic connection, such as a spring M', whereby the strap is normally held under a slight tension to maintain it flat upon the base. In its passage from the heel-piece this strap L passes through the guide *h* in the

head of the spring-actuated rod H, and thence passes through a guide or cut-away portion *p* in the base of the toe-piece and beyond the outer side of the same. This strap L has a series of graduations corresponding with the usual length numbers in sizes, and these commence, preferably, at a point remote from the fixed end of the strap at the heel-piece, which denotes a foot or shoe of minimum length. Another flexible measuring-strap M is fitted to the head of the rod H and is freely slidable through the guide or slot *h'* therein in planes at or about right angles to the strap L and is for the purpose of obtaining the circumferential measurements of the parts of the foot, such as the instep measurement, the waist measurement, and the ball measurement. This strap M has one or both of its surfaces graduated. One of such graduations, preferably the upper series, may be in lines and characters corresponding with the recognized standard scale of width measurement, and which commence at such a point on the strap back of one of its ends as denotes the foot or shoe of minimum width, as shown in Fig. 4. The graduations on the under side of the strap may be in inches and fractions thereof and commence at one end of the strap and run consecutively throughout its length or as far as desired, and is for the purpose of indicating the length of any obtained measurement in inches. The end of the strap M nearest which the graduations commence is provided with a plate 10, having a lug, headed pin 11, or similar device which is designed to engage a slot in a plate or flange 12, extending from the head of the spring-actuated rod H to temporarily secure this end during the time the circumferential measurement is being taken by the strap M.

Projecting transversely from the head of the sleeve or tube F, with its outer end resting upon the bar D, is a plate N, having one or more series of graduations. In the present instance this plate is shown as having two series of graduations and corresponding characters, one of which series of graduations indicates instep measurements and the other ball measurements, with the numbers in each instance commencing at the outer end of the plate, and which indicates a foot or shoe of minimum width. If desired, the lower portion of the tube or sleeve F may be slotted to receive a pin or stud 16 from the spring-actuated rod H to properly guide the rod in its vertical movements and to prevent axial movement, or any other well known or desired means may be substituted for this purpose, if desired. One of the faces of the rod H is provided with a ratchet-surface, and on the sleeve or tube is pivotally mounted a lever P, one end of which is formed as a pawl to engage the ratchet-surface of the rod, while the opposite end is acted upon by a spring 13 to normally hold the pawl in engagement with the ratchet-surface.

The operation of the machine is substan-

tially as follows: The rod H is first pressed down against the power of its spring and held depressed by the pawl end of the lever P, engaging the ratchet-surface of the rod. The foot is now placed on the base A between the heel and toe pieces and the toe-piece is adjusted against the toe. The operator now observes the graduation or number on the bar D which is in line or registers with the pointer E from the toe-piece, after which the tube or sleeve, with its adjuncts, is adjusted along the slot *b* in the base until its pointer indicates one-half of the measurement just noted, when the tube will be centrally placed between the heel and toe pieces, with the rod H in line with the center of the arch or hollow of the foot. The lever P is now operated to release its pawl end from engagement with the ratchet-surface of the rod H, when the spring will force the rod upwardly until its head rests snugly against the hollow of the foot. This action carries the measuring-strap L upwardly with it and the latter, being flexible, will conform itself to the curved outline of the bottom of the foot. The upward movement of the strap also causes its free or yielding end to slide through the slot or opening in the base of the toe-piece. The strap being in the position indicated, the operator observes the graduation or character which registers with the outer face of the toe-piece (which face serves as a pointer in this instance) and thus ascertains the correct length of the foot in size numbers. Having learned this fact, he proceeds to find the correct circumferential measurement to see what width of shoe is required. This he ascertains by first fixing one end of the transverse strap, which is done by causing the headed pin or lug 11 to engage its corresponding slot or opening in the flange or extension 12 of the head I and then drawing the opposite portion of the strap through the guide *h'* of the head I until the foot is closely bound by the strap M. The character or graduation on the transverse strap which corresponds with the character or graduation on the other strap L, indicating the length measurement, will now be found to align itself with one of the graduations on the transversely-projecting plate N from the head of the tube or sleeve, and such aligned graduation or character will indicate at a glance the proper and correct width of shoe required. In other words, if the length measurement shows character No. 7 on the strap L, and the character No. 7 on the transverse strap M registers with the character "C" on the plate N when the strap is drawn across the plate and is closely binding the foot, the measurement indicates that the foot requires a No. 7 C shoe, the length size being No. 7 and the width size C. The "ball" and "waist" measurements are taken in the same manner and with the aid of other series of graduations on the plate N, one of which is shown and marked "ball." In order that I may ascertain if the foot has a high arch or is flat, so that a proper form of

heel may be given the shoe to make the latter comfortable to the wearer, I place a series of numbers on the rod H to designate the lines of the ratchet and use the tube as a pointer to be read with the same. This is for the purpose of showing the kind of heel required for the shoe.

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

1. The combination, of two flexible measuring straps one of which is arranged at approximately right angles with the other and a slotted head in which both straps are slidably mounted, one of said straps being bendable in a plane at right angles with its own width and adapted to inclose a foot or other inserted object, and a plate or bar projecting in the direction of the length of the inclosing straps and having a scale or series of graduations over which the free end of the said strap passes to disclose the circumferential measurement of the object inclosed by the strap.

2. The combination, with a support having a heel and toe piece, of a vertically spring-actuated device slidable longitudinally on said support, and a measuring strap slidable through said device.

3. The combination, with a suitable base having a heel and toe piece, of a support, and a strap slidable through said support having one end fixed and the opposite end yieldingly corrected.

4. The combination, with a suitable base having a heel and toe piece, of a support, and a strap slidable through said support having one end fixed, and a spring connecting the opposite or free end with a fixed point whereby said end is free to move and the strap is kept normally under tension.

5. The combination, with a suitable support having a heel and toe piece, of a vertically movable device slidable horizontally on said support, and a measuring strap slidable on the device in planes at about right angles to the horizontal sliding movement thereof and bendable in planes at right angles to its own width.

6. The combination, with a suitable support having a heel and toe piece, of a device slidable horizontally and vertically on said support, and a measuring strap slidable on the device in planes at about right angles to the horizontal sliding movement thereof, said strap being bendable at right angles to its own width having one end adapted to be fixed and its opposite end free.

7. The combination, with a base or support having a longitudinal slot or guide, a heel and toe piece on said base one of which is fixed and the other adjustable, a tube or

sleeve slidably mounted in said slot, a spring-actuated rod in said tube or sleeve, having guides or slots in its upper portion or head arranged one at right angles to the other, and flexible measuring straps slidably mounted in said guides.

8. The combination, with a base or support having a heel and toe piece one of which is fixed and the other adjustable, of a flexible measuring strap traversing the base, having one end fixed and the opposite end free to move, and a spring-actuated device through which the strap passes whereby the strap may be caused to conform to a curved or irregular outline and disclose the length thereof.

9. The combination, with a slotted base or support having a heel and toe piece, a flexible measuring strap extending along said base, a slide on said strap having a depending rod, a sleeve or tube for the rod having a spring to act thereon to project it upward, and means for holding the rod depressed.

10. The combination, with a slotted base having a heel and toe piece, a flexible measuring strap extending along said base, a slide on said strap having a depending rod, a sleeve or tube for the rod having a spring for projecting the rod upwardly, means for holding the rod depressed and means for indicating the amount of movement of the rod.

11. The combination, with a slotted base having a heel and toe piece, a measuring strap on said base having one end fixed and the opposite end free to move, a tube or sleeve slidable in said base, a spring-actuated rod in the sleeve having a head or plate provided with slots or guides arranged at right angles, and measuring straps adapted to slide in said guides, one of said straps being at right angles to the other and bendable in planes at right angles to its own width, and adapted to embrace the foot to obtain the circumferential measurement thereof.

12. The combination, with a base or support having a heel and toe piece one of which is fixed and the other adjustable, a measuring strap extending longitudinally along the base having one end fixed and the opposite connected with a spring, a flexible measuring strap extending transversely across said base, a slidable carrier for said straps, and a plate fixed to and extending transversely from the carrier having a series of graduations adapted to be read with the graduations of the measuring straps.

In testimony whereof I affix my signature in presence of two witnesses.

ABRAHAM S. ADLER.

Witnesses:

WM. J. LAKE,
SAMUEL S. BOGGS.