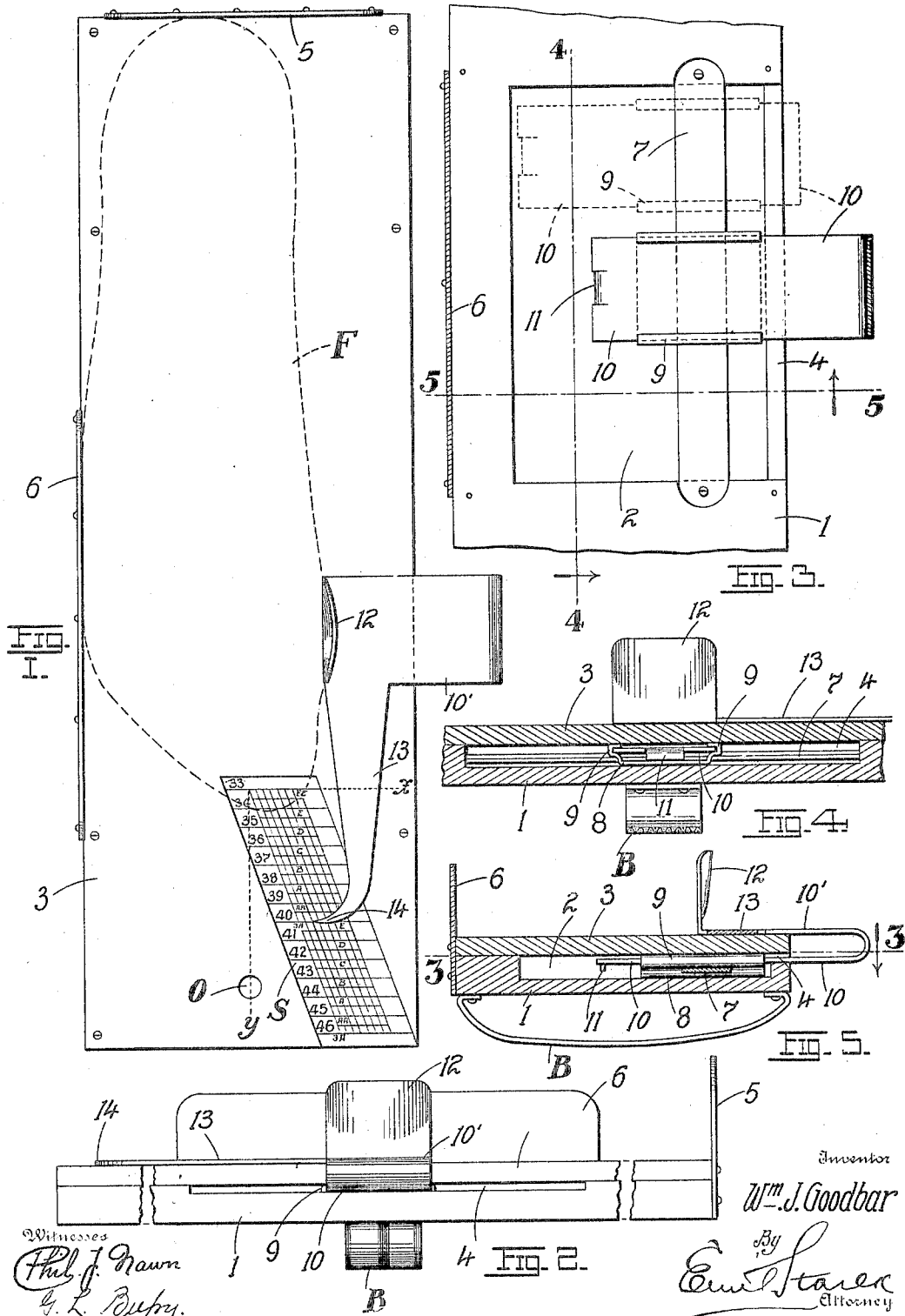


W. J. GOODBAR.
FOOT MEASURING DEVICE.
APPLICATION FILED JULY 29, 1904.



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FOOT-MEASURING DEVICE.

No. 802,448.

Specification of Letters Patent.

Patented Oct. 24, 1905.

Application filed July 29, 1904. Serial No. 218,747.

To all whom it may concern:

Be it known that I, WILLIAM J. GOODBAR, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Foot-Measuring Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in foot-measuring devices; and it consists in the novel construction of appliance more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a plan of the measuring device, showing the foot applied thereto. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section on line 3 3 of Fig. 5. Fig. 4 is a longitudinal vertical section on line 4 4 of Fig. 3, and Fig. 5 is a cross vertical section on line 5 5 of Fig. 3.

The object of my invention is to provide a device for shoe-dealers to enable them to readily and accurately measure the dimensions of the foot, which are essential for determining the size of shoe corresponding thereto. As is well known, the usual measurements taken are the length and the width, the latter being the width of the foot at the point of the ball. By reason of the substantially constant relation existing between the length of the foot and the distance from the heel to a line extending transversely through the ball of the foot and by reason of the approximately uniform increase of width in proportion to the length of the foot a scale which is based on the constancy of these relations may be devised which for any given length of foot shall indicate what the width shall be, or, given the width at the point of the ball, what the length shall be. A scale which for any width shall indicate the corresponding length may be so constructed as to make the results or markings indicated thereby referable to any two available coördinate axes, a method well understood in applied mathematics. In my present invention I have devised such a scale, applying thereto a pointer or index whose position for any result indicated thereby on the scale is determined by the position of the ball of the foot undergoing measurement, the pointer being coöperatively con-

nected to said ball, that being the point at which the width of the foot is measured.

A further object of the invention is to construct a measuring device which is simple and capable of instant application, all as will more fully appear from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 represents a base-plate provided with a chambered or depressed portion 2, and 3 a cover serving as a platform for the direct support of the foot F. One of the lateral vertical walls of the chamber 2 is shallower than the opposite one, thereby leaving a longitudinal slit 4 for the free passage of the traveling arm carrying the pointer, as presently to be seen. The rear end of the plate 1 is provided with a limiting wall or abutment 5 for the heel of the foot, and the side opposite the slit 4 is provided with a lateral wall 6 for the side of the foot to bear against, as plainly seen in Fig. 1. Disposed within the chamber 2 and longitudinally with the plate 1 and mounted slightly above the bottom of the said chamber 2 is a bar or rail 7, along which is mounted a runner or plate 8, adapted to reciprocate along the same, said runner being provided with lateral grooves or ways 9 for the reciprocation therethrough of an arm 10, the outward movement of said arm being limited by the inner terminal downwardly-deflected lip 11 striking the edge of the rail 7. The arm 10 operates through the slit 4 and has an outer parallel inwardly-folded portion 10', which terminates at its free end in a curved wing 12 for engaging the ball of the foot. The portion 10' is, moreover, provided with a lateral extension 13, terminating in a pointer or index 14, which coöperates with the scale S, stamped or printed on the platform. As stated before, the scale is referable to two coördinate axes x and y , the former being the axis of abscissas and the latter the axis of ordinates. The scale itself is composed of a series of lines disposed parallel to the axis x and spaced suitable distances apart, said distances being spaced in the direction of the axis y . Intersecting the first set of parallel lines are a series of parallel oblique lines marked with characters "3A, AA, A, B," and so on, indicating the width of the foot for any particular length. Since the width of a foot increases progress-

ively with the length, the designation of the width for one length will suffice for designating the width for any other length, and since the widths are measured along lines parallel to the axis of abscissas x and at the same time bear a constant relation to the lengths it follows that the width-lines will be disposed at an oblique angle to the respective coordinate axes, the angle of obliquity being ascertained from actual experience and being well understood by shoe manufacturers and dealers. In the present scale the lengths are represented by numbers "33, 34, 35," and so on, and are purely arbitrary, each number representing so many inches or any other scale denomination determined upon. In lieu of the arbitrary numbers here shown actual inches may be indicated; but it is not always best for the customer to know the exact size of shoe he wears, for he may often be under the impression that a shoe does not fit him when it actually does, so that it is sufficient for the dealer to know how to interpret the length characters or symbols for him.

In having a shoe fitted the customer places his foot upon the platform 3, with the heel well against the abutment 5 and the side of the foot against the wall 6. The clerk then carefully adjusts the wing 12 of the index to the ball of the foot and notes the results on the scale to which the index points. In the illustration Fig. 1 the index points to a length corresponding to the numeral 40 and to a width (vulgarly denominated the "last") corresponding to "A." For a length corresponding to 46 the width "A" would of course be correspondingly greater, being, as before stated, that a constant ratio exists between the length and width. For a like reason a "33, EE" would correspond approximately to a "37, B" in the matter of width, but of course not in the matter of length. (See Fig. 1.) The maximum width capacity of the present scale would correspond to a line parallel to the axis of x measured from the point of intersection of xy to a point projected on the axis x from the lower right-hand corner of the scale, said corner being the point of intersection between the horizontal line 46 and diagonal line E E.

As seen from the dotted position of the parts in Fig. 3, the arm 10, with its pointer, can be shifted instantaneously to any position to adjust itself to any foot, the runner 8 being free to reciprocate along the rail 7 in one direction and the arm 10 being free to reciprocate in a direction at right angles thereto. I do not, of course, wish to limit myself to the details of construction by which this universal movement for the pointer is possible, as any equivalent thereof would fall within the spirit of my invention.

Where no special support is provided for

the plate 1, the latter may be held in the hand by the clerk through the medium of a strap B. The device may be hung up by passing the opening O over a nail or hook. Of course I may vary the scale by varying the characters or symbols thereon without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. In a foot-measuring device a stationary platform for the support of the foot, a heel-abutment for the same, a scale marked and obliquely disposed on the platform indicating lengths and widths referable to intersecting coordinate axes, and an adjustable index adapted to be cooperatively connected to the ball of the foot supported on the platform, substantially as set forth.

2. In a foot-measuring device, a stationary platform or foot-rest, suitable abutments or walls for the heel and side of the foot carried by the platform, an adjustable index mounted on the platform and capable of longitudinal and transverse movement, a wing coupled to the index for engaging the ball of the foot, and an obliquely-disposed scale marked upon the platform indicating lengths and widths referable to two intersecting coordinate axes, substantially as set forth.

3. In a foot-measuring device, a platform or foot-rest, a heel-abutment and side wall projecting therefrom for limiting the position of the foot, a longitudinally-movable plate or runner mounted in connection with the platform, a reciprocating arm movable transversely to the path of travel of the runner mounted on, and guided by, the latter, a wing coupled to said arm and traveling above the plane of the platform adapted to engage the ball of the foot supported by said platform, a scale marked upon the platform having markings referable to coordinate axes and indicative of the length and width of the foot measured, and a pointer connected to the arm cooperating with said scale, substantially as set forth.

4. In a foot-measuring device, a platform for the support of the foot, a scale marked thereon comprising a series of parallel lines spaced suitable distances apart, a second series of parallel lines spaced apart and intersecting the first series at an oblique angle, the first series of lines being marked by characters indicating lengths and the oblique series by characters indicating widths, the markings being referable to intersecting coordinate axes, substantially as set forth.

5. In a foot-measuring device, a platform for the foot, a chamber located below the platform, a rail disposed longitudinally in the chamber, a plate or runner on the rail, an arm movable on the runner at right angles to the rail, a slot formed in the side of the measuring device for

the free passage of the arm, a parallel inwardly-folded portion forming a part of the arm and located above the platform, a wing on said folded portion for engaging the ball
5 of the foot, an index forming a part of the folded portion aforesaid, the platform having marked thereon a scale indicative of lengths and widths, a heel-abutment and side wall for

the foot, the parts operating substantially as and for the purpose set forth. 10

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

WILLIAM J. GOODBAR.

Witnesses:

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G. L. BELFRY.