

No. 810,594.

PATENTED JAN. 23, 1906.

E. C. WRIGHT.
HEEL ALINING MEANS FOR LASTS.

APPLICATION FILED JAN. 12, 1905.

3 SHEETS—SHEET 1.

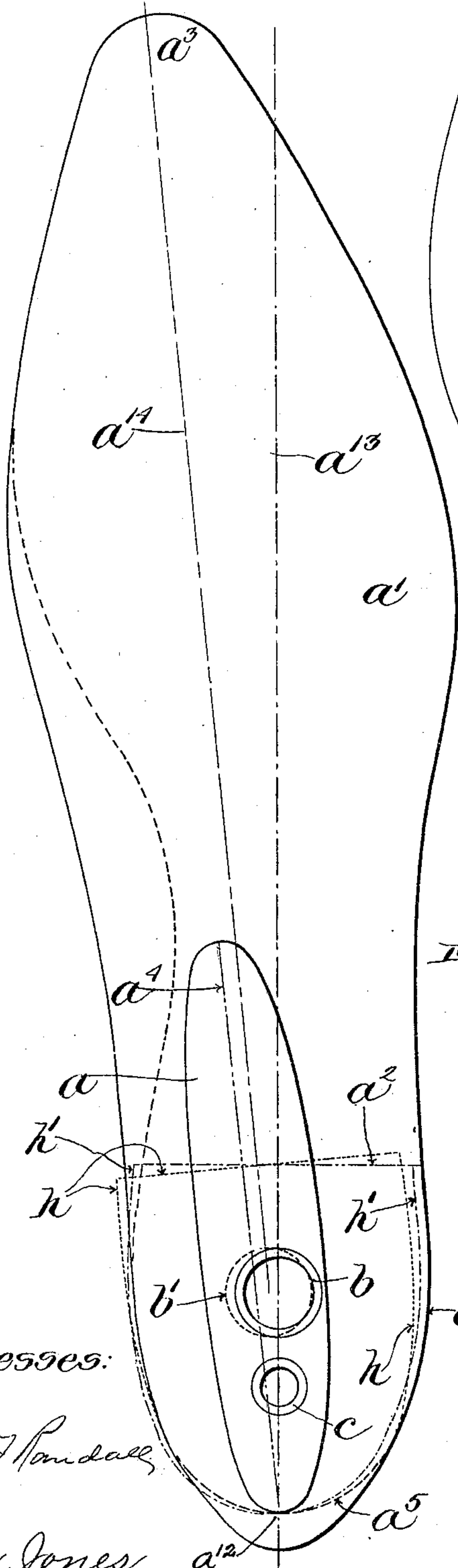


Fig. 1.

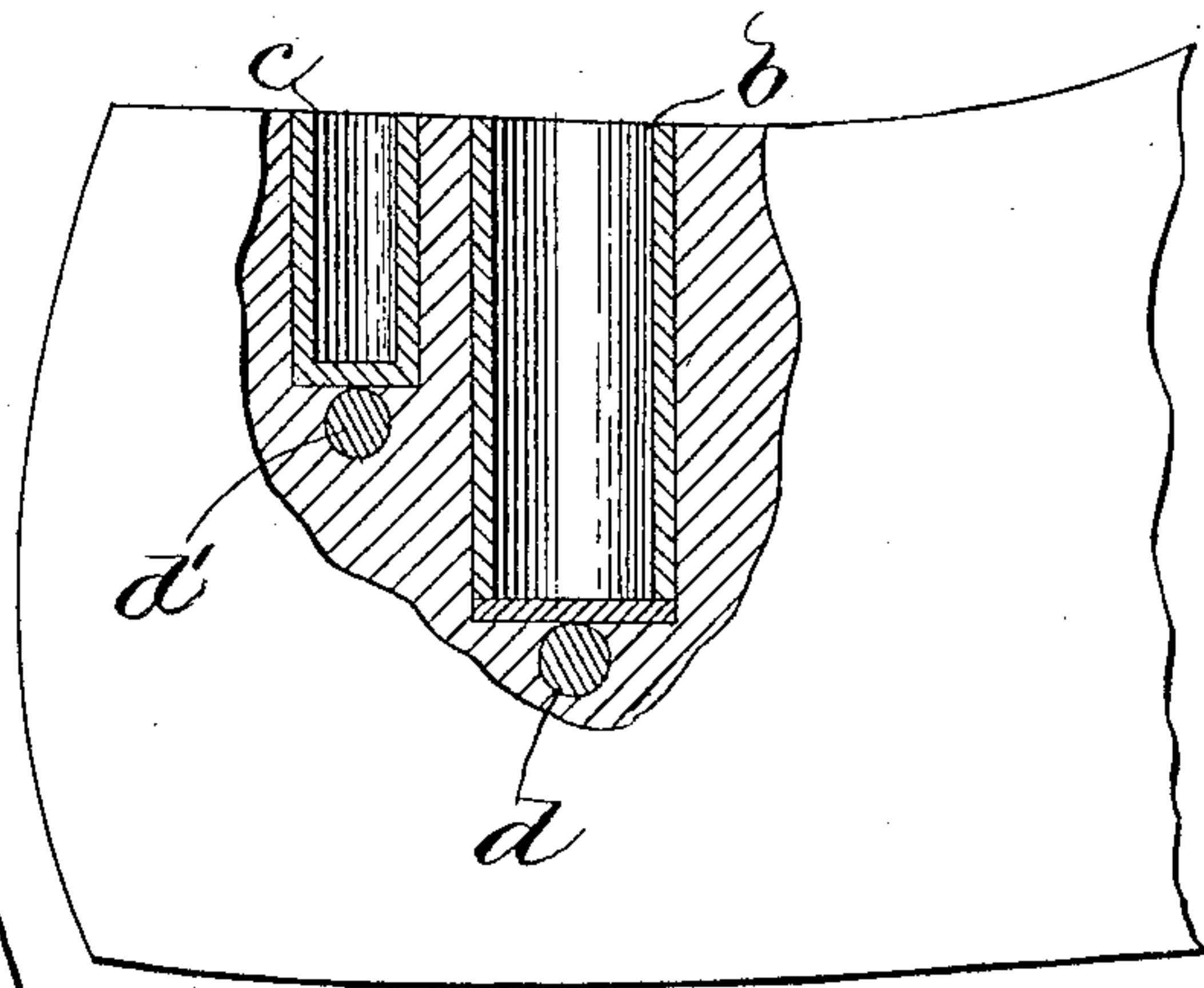


Fig. 2.

Witnesses:

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Inventor:

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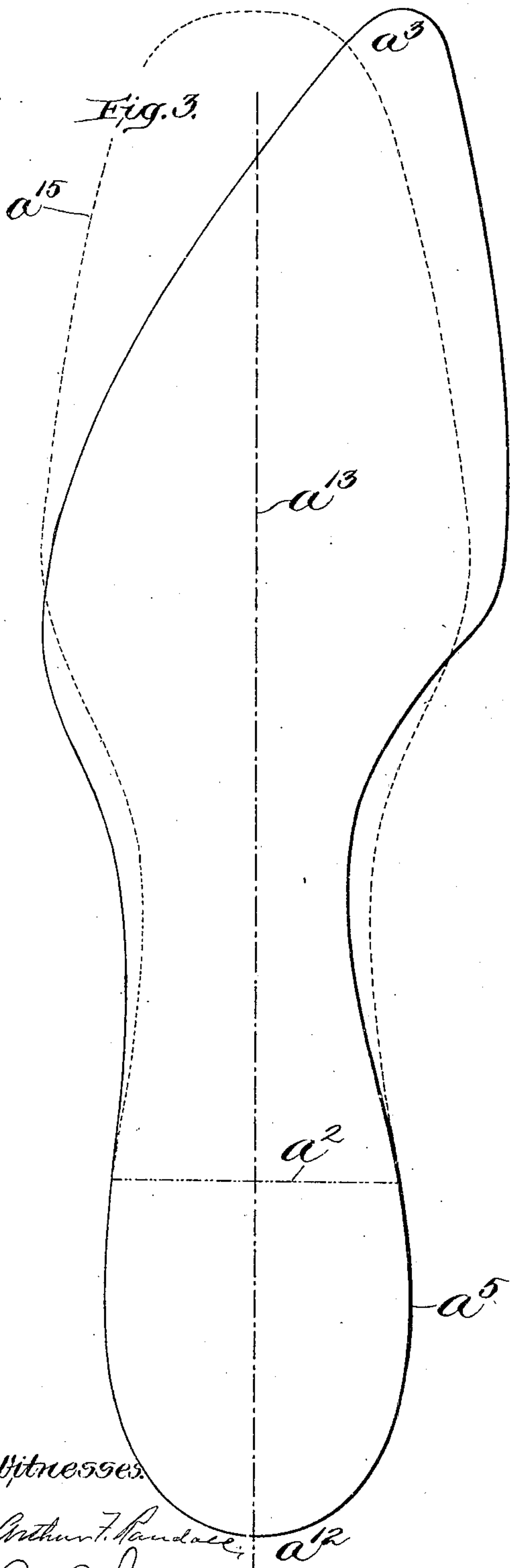
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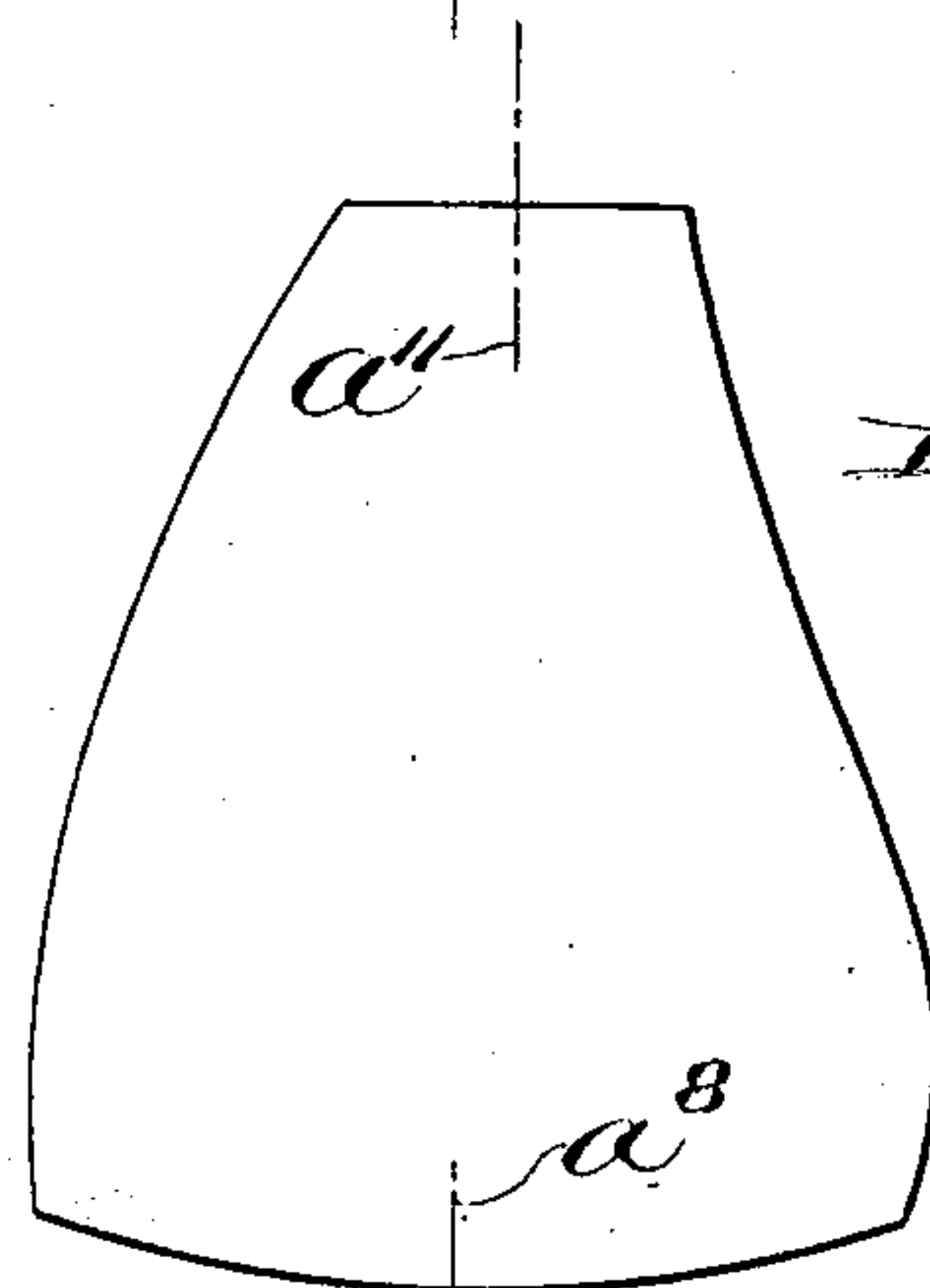
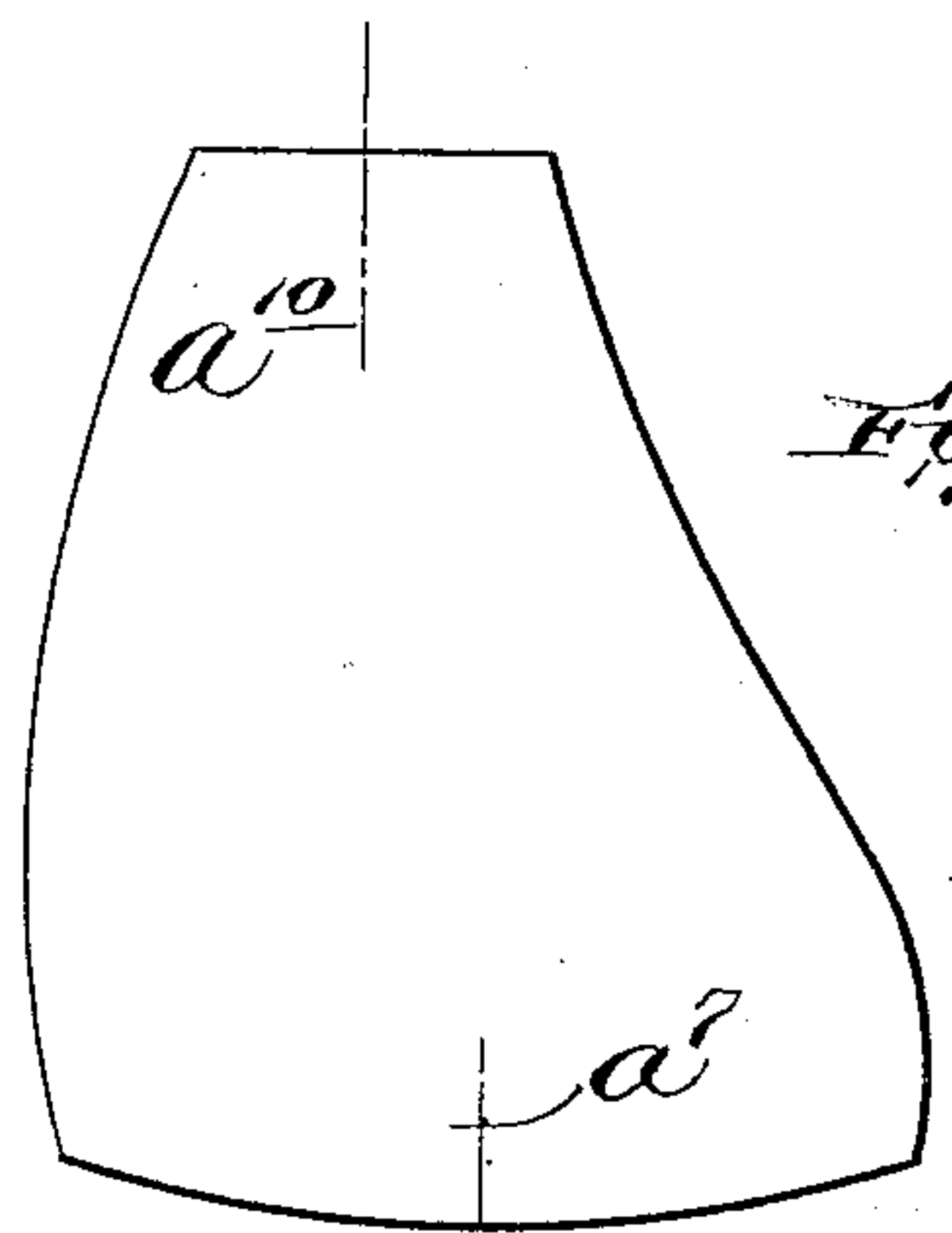
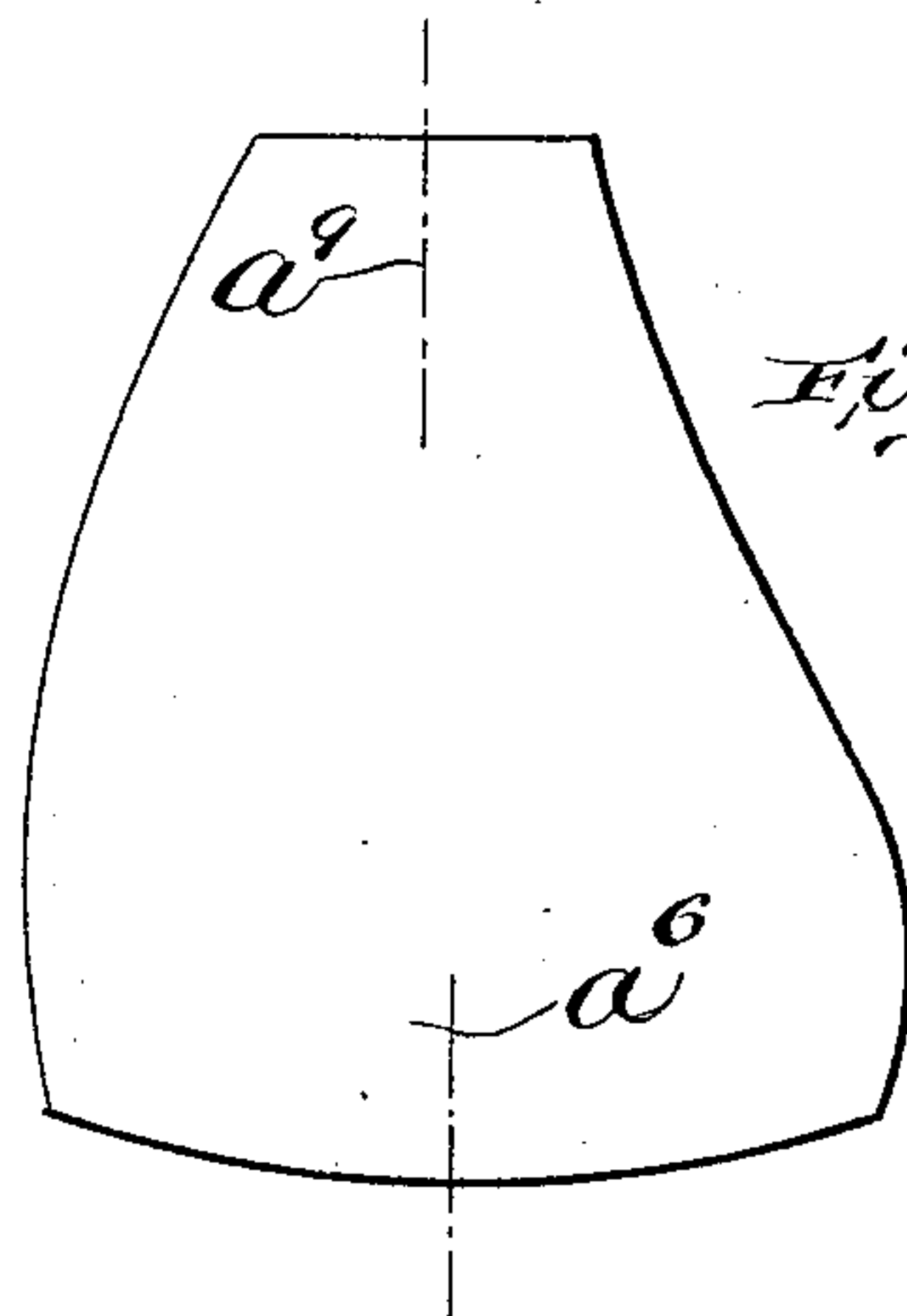
APPLICATION FILED JAN. 12, 1905.

3 SHEETS—SHEET 2.



Witnesses.

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3 SHEETS—SHEET 3.

Fig. 7.

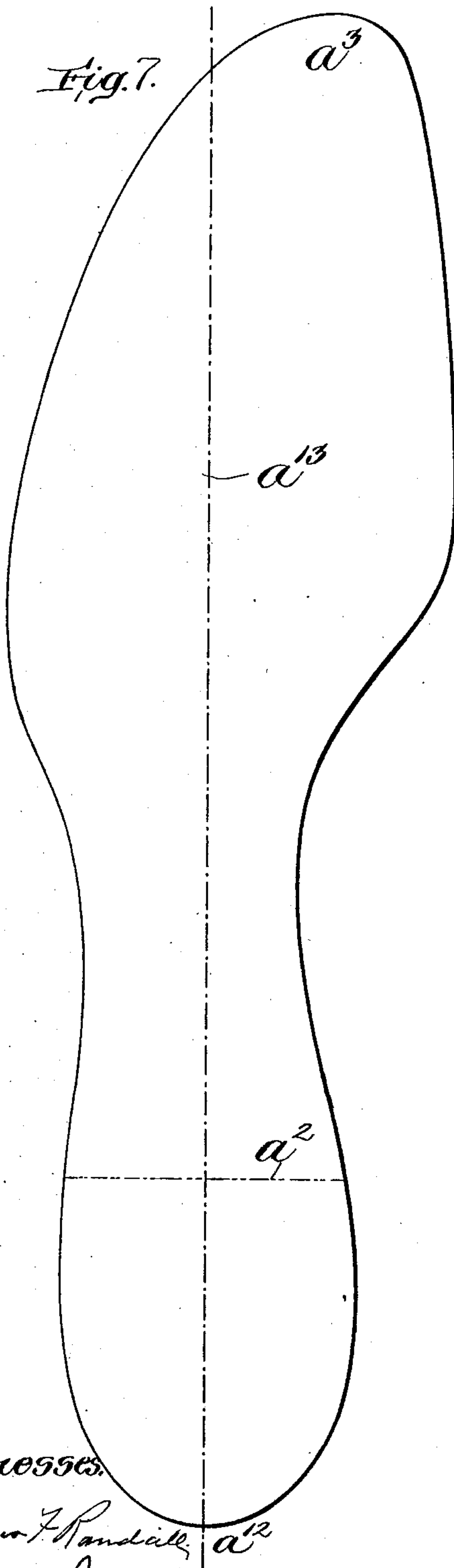
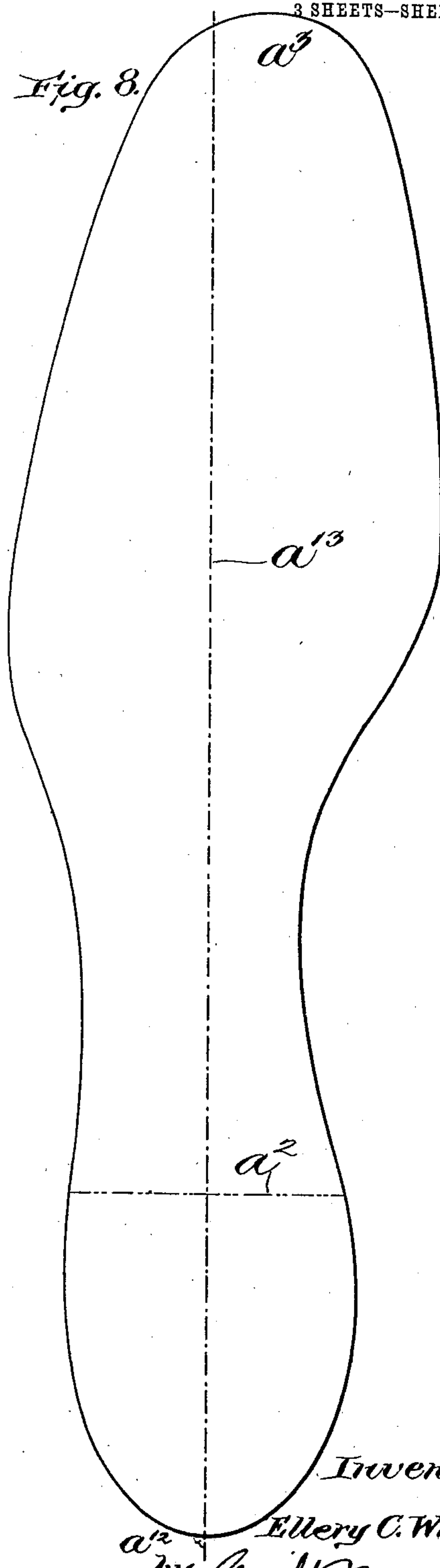


Fig. 8.



Witnesses.

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UNITED STATES PATENT OFFICE.

ELLERY C. WRIGHT, OF CAMPELLO, MASSACHUSETTS.

HEEL-ALINING MEANS FOR LASTS.

No. 810,594.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed January 12, 1905. Serial No. 240,675.

To all whom it may concern:

Be it known that I, ELLERY C. WRIGHT, a citizen of the United States, residing at Campello, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Heel-Alining Means for Lasts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

As now commonly practiced the alinement or proper location and positioning of the heel of a shoe is determined by the eye of the operator, so that it results that in a large factory some heels are in proper line or position and others are not, according to the skill of the particular workman.

Accordingly my invention consists of means for automatically and invariably securing the correct positioning of the heel on the shoe with relation to the last.

To make my invention more clearly understood, let it be remembered that in applying a heel to a shoe the heel is held firmly by the heeling-machine, while the shoe on the last is placed bottom up on a spindle or post beneath the heel, said spindle entering the last thimble or socket, and then the operator grasps the toe of the shoe and last and swings the shoe around until, according to his best judgment, it is in correct position with relation to the heel, whereupon the heeling-machine is caused to secure the heel in place. As, however, lasts are not only made right and left, but are usually more or less crooked and are continually varying in dimensions and shape, the liability of getting the heel on square is uncertain; but as the last is the controlling member I have devised means for insuring that the last shall always assume exactly the right position, thereby eliminating the skill and judgment of the operator and automatically insuring the correct positioning of the heel.

My invention consists in first locating what I term the "center line" of the last and then providing two holes or thimbles on said center line extending perpendicularly to the bottom of the last, one of these thimbles being the usual spindle-socket and the other being an alining-socket to cooperate with an auxiliary pin or spindle on the heeling-machine, or, in other words, I locate these two thimbles or holes in a plane extending at right angles to the normal breast-line of the heel.

My invention will be more fully understood in connection with the following description, taken with reference to the accompanying drawings.

In the drawings, Figure 1 is a top plan view of a last constructed according to my invention. Fig. 2 is a side elevation thereof, partially broken away. Figs. 3, 7, and 8 are plan views of last-bottoms or "patterns," and Figs. 4, 5, and 6 are diagrammatic views showing the contour or transverse sectional outline of sample styles of lasts at the widest portion of the heel.

Viewing Fig. 1 (which represents a common construction and type of crooked last) it will be seen that the cone a of the last does not extend at right angles to the breast-line a^2 of the heel nor in alinement with the toe a^3 of the last, the direction of said cone being indicated by the line a^4 . The commonly-accepted usage is to provide the thimble b of the last in the center of the cone at the place indicated by the dotted circle b' , and then the operator naturally swings the last on the center of said circle b' as a pivot into alinement with the toe a^3 . The result is that the heel is placed on a shoe as indicated by the line h instead of coinciding with the contour of the heel of the shoe (corresponding to that of the last, as indicated at a^5) and having its breast-line at a^2 , and even if the operator should have the skill and judgment to swing the toe so as to bring the breast of the heel into alinement with the breast-line a^2 it is obvious that the heel would even then be shifted to one side of the proper position, as indicated by the dotted line h' . This results from the fact that lasts are extremely peculiar and deceptive in shape, the cone very seldom extending in the direction of the center line of the last, sometimes diverging toward one side of the toe and sometimes toward the other, and being very seldom vertically over the center of the bottom of the heel. For example, I have shown in Figs. 4 to 6 well-known styles of last-cones, said figures indicating the contour of the lasts in the vertical transverse planes of the widest parts of the heel—i. e., through the axial line of the spindle-thimble b —where I have indicated by the lines $a^6 a^7 a^8$ the central vertical plane or center line of the last, and it will be seen that in each instance it does not coincide with the middle of the cone, which is indicated by the lines $a^9 a^{10} a^{11}$. According to my inven-

tion I locate the spindle-sockets coaxially of this center line $a^6 a^7 a^8$, whereas the present construction would require the thimble-axes to coincide with the center of the cone $a^9 a^{10}$ 5 a^{11} . Having located the spindle socket or thimble b properly, the next step in the manufacture of the last according to my invention is to locate an independent alining thimble or socket c behind said spindle-socket in such 10 position that it will invariably cause the last to assume exactly the right position with relation to the heel in the heeling-machine. I find the proper location for this auxiliary or independent alining-thimble by running a 15 line along the bottom of the last through the axis of thimble b and perpendicular to the breast-line a^2 , or, stated in other words, longitudinally of the last and coinciding with the center a^{12} of the rear end of the bottom of 20 the heel and the axial line of the thimble-socket, (when correctly found as above explained.) This line does not coincide with the toe a^3 of the last, as would be expected in casually looking at the last along the bottom 25 thereof, (as the operator is required to do in the present system of heeling, where he uses his judgment in swinging the last and shoe to heeling position,) but falls at one side thereof usually, although not always, at the outside 30 thereof. This center line is indicated by the dotted line a^{13} in the drawings, where I have shown different well-known types of "crooked" lasts, by which I mean lasts wherein said center line does not coincide with the 35 normal trend of the last. In Fig. 1 I have indicated by a line a^{14} the normal trend of the last or straight-ahead direction in which the operator would naturally hold the last and shoe as at present constructed, whereas the 40 last should assume the deflected position in which it is shown in the drawings, thereby bringing the line a^{13} into the straight-ahead position. In Fig. 7 I have shown what is known as a "medium-toe" last, and in Fig. 8 a "straight 45 London" style, while Fig. 3 shows the common "narrow opera" style, and in each instance it will be seen that the proper placing of the heel actually requires that the toe of the last shall be deflected to the right in order 50 to bring its center line a^{13} straight ahead, (so as to be perpendicular to the breast-line a^2 of the heel.) If a last-bottom were truly symmetrical, having its opposite sides precisely the same as indicated by the line a^{15} , Fig. 3, 55 then the center line a^{13} would actually be the longitudinal middle of the pattern or last-bottom a^{15} , and this affords still another means of accurately locating said center line—viz., simply by projecting from the heel contour 60 a^5 a straight or "slipper" form, as indicated at a^{15} , and then creasing the paper pattern thereof down the middle. I prefer to attain the same result with less labor simply by similarly locating the middle line between 65 the opposite wide portions of the heel-bottom

outline a^5 . The breast-line a^2 usually corresponds with the front edge of the heel-plate.

Having thus accurately determined the true center line of the last, I bore two holes 70 downwardly in the cone of the last perpendicular to the bottom, so that their axes are in the vertical plane of said center line irrespective of whether or not said holes come in the center of the cone, one of said holes constituting the spindle-socket, and therefore 75 being located in the transverse plane of the widest portion of the last-heel, and the other hole being preferably smaller and located at the rear thereof to receive, respectively, the thimbles b and c . These thimbles are 80 supported on transverse bolts $d d'$, (in the manner explained in my Patent No. 642,945 of February 6, 1900,) and the rear thimble is preferably made of steel and adds greatly to the strength and serviceableness of the last 85 in use.

When a last constructed according to my invention is applied to the heeling-machine, (provided with spindles corresponding to the 90 holes in the last,) the last is thereby brought automatically into absolutely correct position, so that the heel is secured to the shoe in correct alinement not only with the breast-line a^2 , but with the curved heel contour a^5 , rendering unnecessary the shaping and trim- 95 ming which now invariably are required for preventing a misshapen ungainly appearance due to the improperly-located heel. If for any reason the positioning of the said two spindles of the lasting-machine should be 100 changed, the position of the holes and thimbles of my last would obviously be correspondingly changed, and I consider any such change as coming within the spirit and scope of my invention. 105

I make no claim to the provision of two holes in a last-heel, my invention residing in combining the same with the crooked last in such manner and location as to automatically 110 aline the heel properly in the heeling operation, whereas the auxiliary hole which was once used in lasts was simply for holding the last steady and preventing its whirling around on a jack when it was desired to manipulate or treat the shoe in a steady posi- 115 tion.

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

1. A crooked last, whose heel contains two 120 independent thimbles extending from the cone part way to the bottom of the last and having their axes extending perpendicular to the bottom in the plane of the center line extending midway between the opposite sides 125 of the heel and at right angles to the normal breast-line of said heel.

2. The combination, with the usual jack-spindle socket of a crooked last, wherein the center line as herein described does not coin- 130

cide with the normal trend of the last, of an alining-hole located in the wood of the last at the rear of said socket in the same axial plane with the axis of said socket extending at right
5 angles to the normal breast-line of the heel.

3. A last of the kind herein described, wherein the center line diverges from the normal trend of the last, containing two independent thimbles located in the heel with
10 their axes in the plane extending vertically of

the bottom of the last midway between the opposite sides of the heel at the wider portions of the bottom edges thereof.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

ELLERY C. WRIGHT.

Witnesses:

F. S. FAXON,
EARL P. BLAKE.