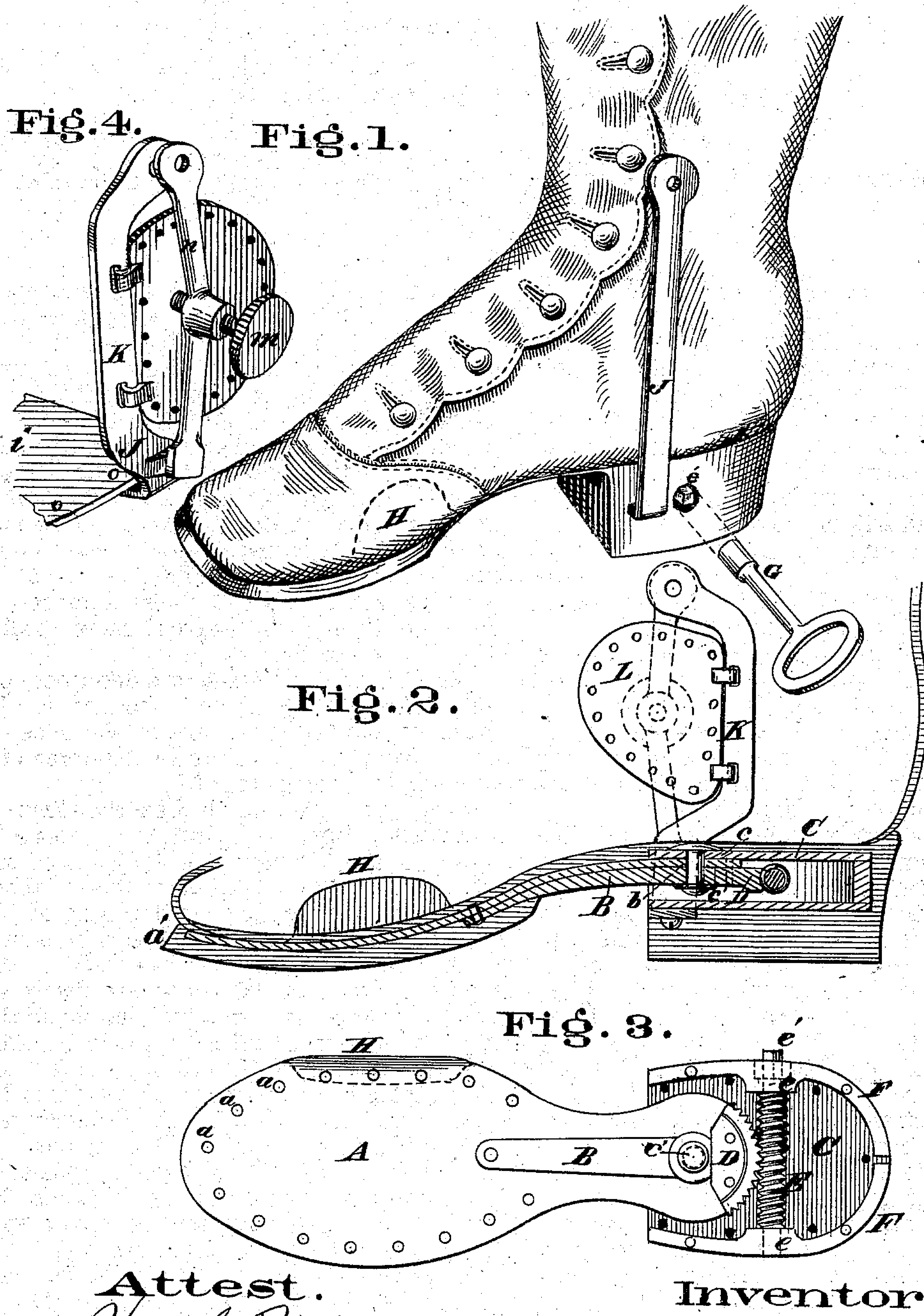
W. AUTENRIETH.

Club-Foot Shoes.

No. 156,200. Patented Oct. 27, 1874.



Attest.

Wm. S. Bates
Jeremiah F. Twohig

Inventor.

William Autenrieth

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

WILLIAM AUTENRIETH, OF CINCINNATI, OHIO.

IMPROVEMENT IN CLUB-FOOT SHOES.

Specification forming part of Letters Patent No. **156,200**, dated October 27, 1874; application filed May 27, 1874.

To all whom it may concern:

Be it known that I, WILLIAM AUTENRIETH, of Cincinnati, Hamilton county, Ohio, have invented an Improvement in Club-Foot Shoes, of which the following is a specification:

My invention relates to shoes for bringing club and twisted feet into their proper position; and consists in the combination and arrangement of a metallic sole, pivoted to a heel-piece and adjustable by means of an endless screw meshing into a sector on the sole, and a guard or counter-plate to prevent the foot from being forced against the iron standards and chafing, as more fully described.

In the drawings, Figure 1 is a side view of the shoe, as it appears upon the foot when fitted with my machinery for turning, and completely finished. It shows also the key in position. Fig. 2 is a vertical section, showing the construction of the several parts when fitted into the shoe. Fig. 3 is a view of the bottom of the metallic sole and heel, with the lower heel-plate removed, so as to show the mechanism for moving the foot. Fig. 4 is an elevation of the counteracting side plate.

A, Fig. 3, is a metallic sole perforated at its edges, as seen at *a a a*, so as to allow it to be attached to the inner sole of the shoe, and so that an outer leather sole may also be attached, as seen at Fig. 2. This outer sole may, however, be omitted or attached by extending it beyond the edge of the metallic sole A. To strengthen the sole at the instep and secure a strong and firm lever for moving it, there is attached a stiff piece of metal, B, Figs. 2 and 3, extending from the heel to the ball of the foot. Instead of this the sole A may be thickened at the instep, so as to secure the same effect. At *b*, Fig. 2, this strip B and sole A are perforated, and a corresponding perforation is made at *e* in the upper heel-plate C. Through these perforations a rivet is passed and loosely headed over a washer, as seen at *c'*, Figs. 2 and 3, so that the sole may turn readily about the rivet, as a center or fulcrum. Just beyond this rivet, which thus serves as the fulcrum, is attached the plate D, the horizontrl section of the outer edge of which is convex, as seen in Fig. 3, while the vertical section of the outer edge is concave, as seen in Fig. 2. This outer edge is notched or has sections of a thread cut in it, as seen in Fig. 3, so as to correspond with the threads in the screw E, into which it meshes. E is an endless screw, which runs in bearings E E in the side plates F F of the heel at E', Figs. 1 and 3. The outer end of the shaft on which the screw is cut is made square, so that it may be turned by the key G, thereby causing the sole A or long arm of the lever to turn on the fulcrum B. The outer side of sole A is turned up at the point opposite the widest part of the foot, as seen at H, Figs. 1, 2, and 3, so as to press against the foot more firmly, and thereby more readily bring it into position.

The metallic parts heretofore described, except the key, may all be embedded in the leather of the sole and heel of the shoe, as seen in Fig. 2, so as not to be observed any more than as seen in Fig. 1.

To the under plate of the heel the stirrup I is attached, Figs. 1, 2, and 4, by means of screws in the bottom plate *i*, Fig. 4, of the stirrup. The sides of the stirrup rise to about the height of the ankle on either side of the foot, and these may be jointed each to a supporting piece of metal on either side of the leg, the upper parts of which are firmly secured in position by a strap passing round the leg below the knee and then buckled. The side of the stirrup on the side of the foot opposite the lap H is bent or curved, as seen at K, Fig. 2 and 4, and within the curve, and hinged to the side of the stirrup is the counteracting-plate L, which may be adjusted at pleasure by means of the set-screw M in standard N. This has its edges perforated so that a soft pad may be secured to the inner side. Its object is to relieve the pressure of the foot against the stirrup, which otherwise always takes place as soon as pressure is applied at H on the other side to bring it into position.

In operation you put the shoe upon the foot of the patient, and turn the screw by means of the key a little every day, or as often as desired, so as gradually to bring the foot to its normal position.

By this device you can make the change each day so slight as scarcely to be realized, yet which in time, by the continued use of the shoe, brings the foot into its proper posi-

tion, and keeps it there until the parts perfectly adjust themselves to these new relations, when further use of it may be dispensed with.

I do not claim the broad idea of a vibrating pivoted sole; but

What I do claim as my invention is—

1. The arrangement of sole A, pivoted at *b*, and adjustable by means of endless screw E and toothed sector D, as shown and described, when combined with guard-plate L, as shown and specified.

2. The guard-plate L, with adjustable set-screw M, substantially as shown and described.

WILLIAM AUTENRIETH.

Witnesses:

WM. S. BATES,

JEREMIAH F. TWOHIG.