

Z. Hussey,
Treating Club Feet.
 N^o 9,472. Patented Dec. 14, 1852.

Fig. 1.

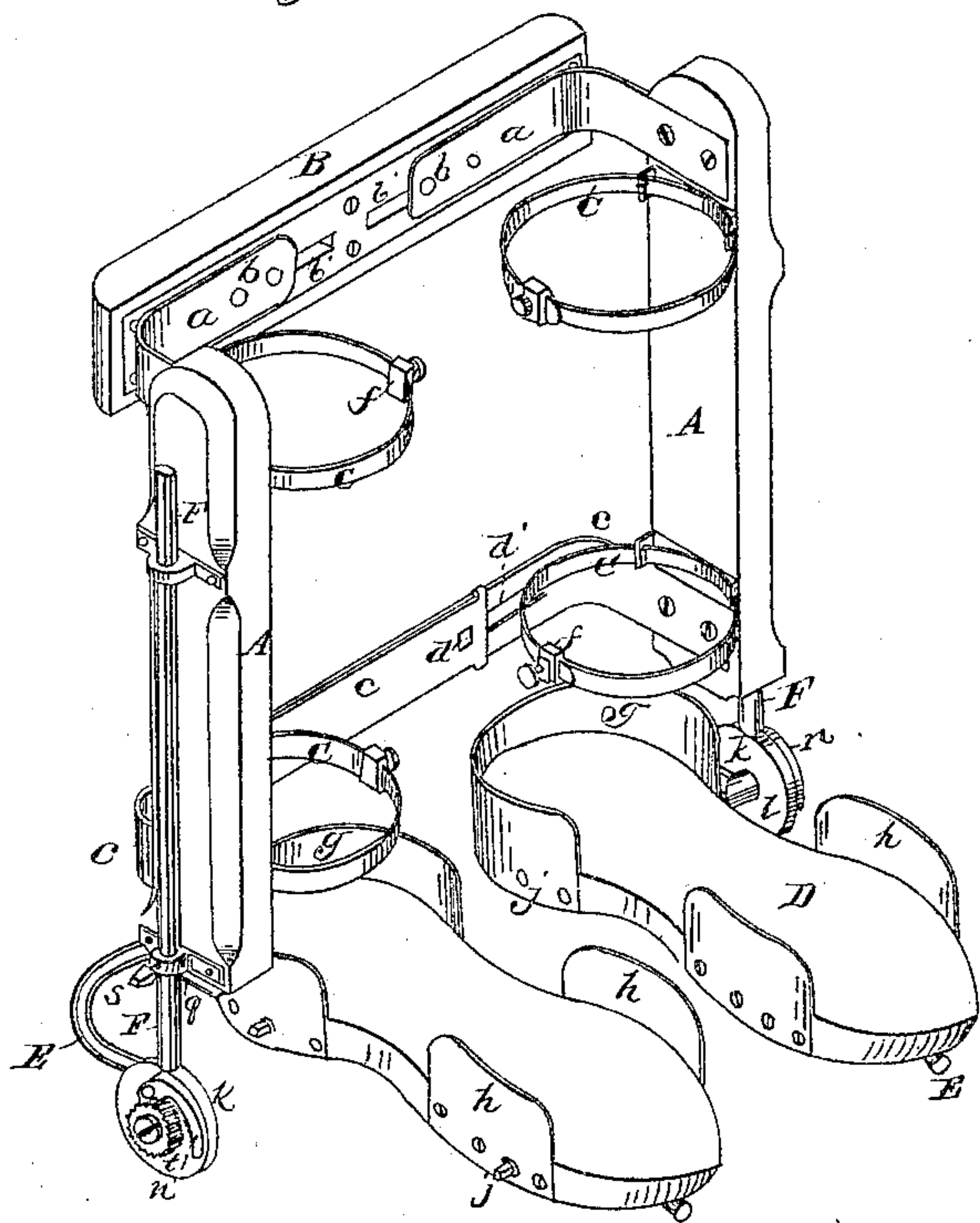


Fig. 2.

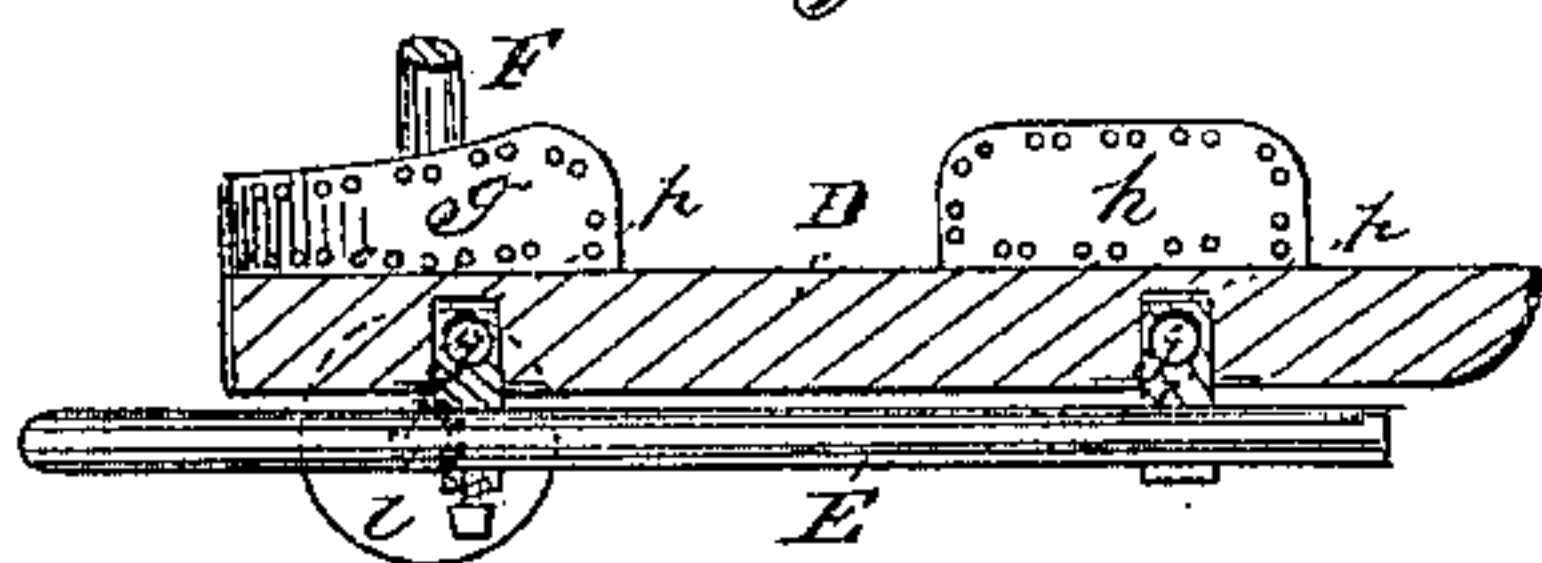


Fig. 3.

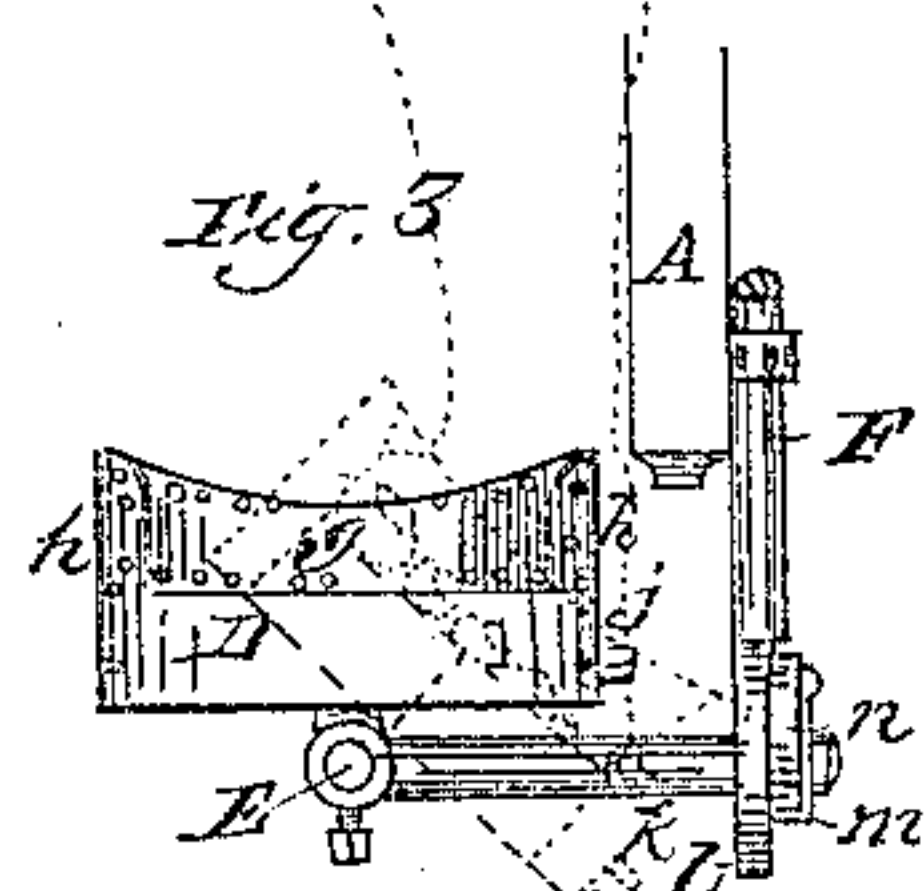
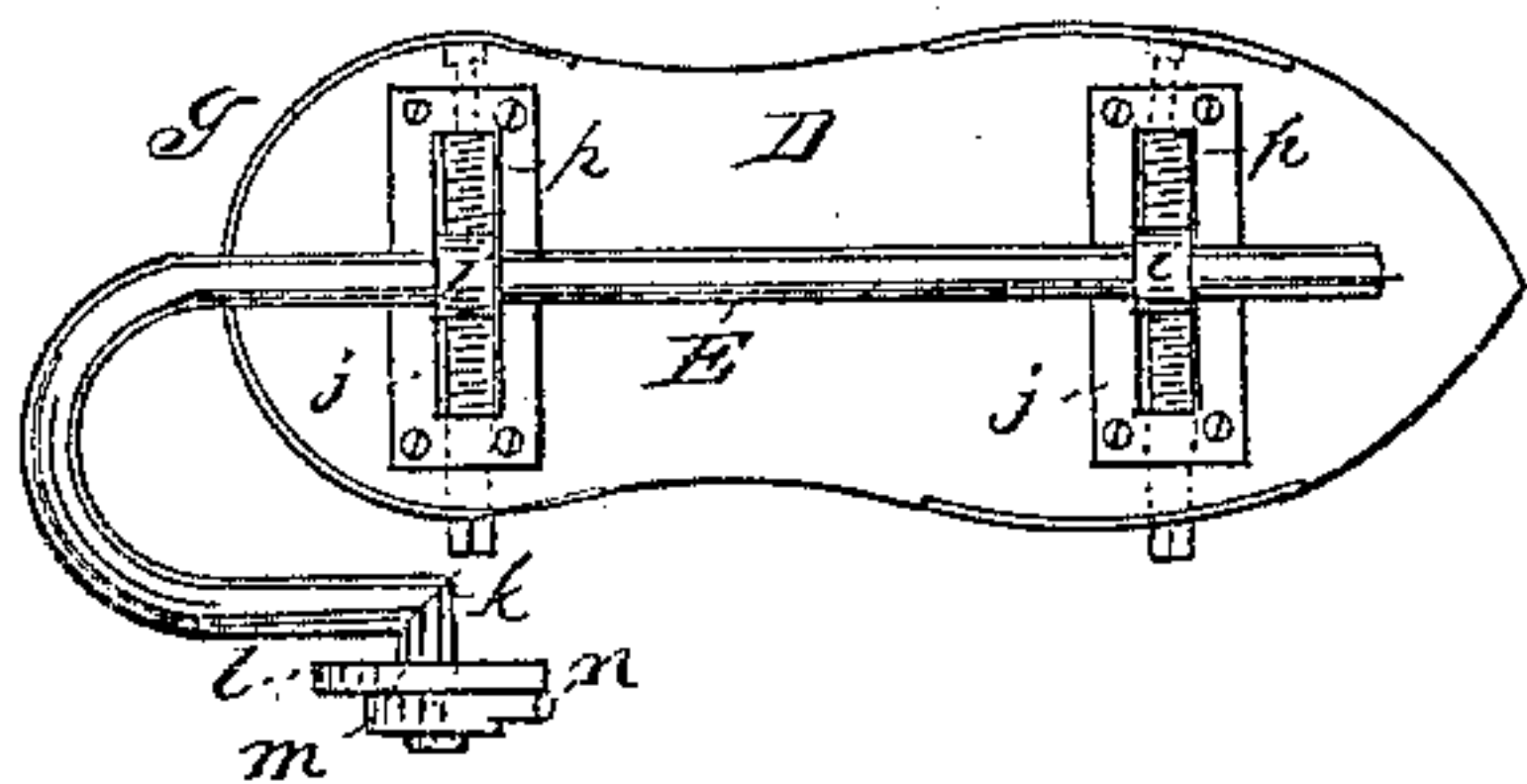


Fig. 4.



UNITED STATES PATENT OFFICE.

ZIMRI HUSSEY, OF CHILLICOTHE, OHIO.

APPARATUS FOR THE CURE OF CLUB-FEET.

Specification of Letters Patent No. 9,472, dated December 14, 1852.

To all whom it may concern:

Be it known that I, ZIMRI HUSSEY, of Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Apparatus for the Cure of Club-Feet; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of the apparatus. Fig. 2, is a longitudinal section of one of the shoes; Fig. 3, is a front view of the same, and Fig. 4, is an underside view of the same.

Similar letters of reference indicate corresponding parts in each of the several figures.

My improved apparatus which I denominate the "club foot adjuster" consists of two pieces of wood or other material which I will term side pieces, of sufficient length to extend from the knees to the bottom of the feet; these are intended to lie directly along the outsides of the legs and are connected together behind in such a manner as to be adjustable at any required distance apart and to be kept always parallel or nearly so with each other. To each of the above side pieces two or more metallic bands are attached by loops; these bands encircle the limbs below the knees and above the ankle joints, keeping the limbs in the same relative positions. A foot-piece or shoe is attached to each side piece to receive the foot, its attachment being such as to allow of every movement which it may be necessary to give to the foot, and means being provided for securing the foot in any position to which it may be brought.

To enable those skilled in the arts to make and use my invention I will proceed to describe its construction and the *modus operandi*.

A, A, (Fig. 1) are the side pieces which I prefer to be of wood. B, is what I term the back piece, also of wood placed crosswise behind the upper parts of the side pieces, to this the side pieces are connected by bent metal plates *a, a*, the said plates being rigidly connected to the side pieces, but connected to the back piece by bolts *b, b*, which slide in slots *b', b'*; these slots allow the side pieces to be brought nearer to or farther from each other, the bolts being provided with nuts (not shown) to secure the side pieces. At the lower ends the side pieces

are connected at the back by two bent plates or bars *c, c*, one of which is furnished with a bolt *d*, capable of sliding in a slot *d'*, in the other and secured by a nut.

C, C, are metallic bands of which I have shown two to each leg, as I consider that number to be in most cases sufficient; they slide each through a loop or pair of loops *e, e*, secured to the side pieces, and their ends are secured together by clamps *f*, furnished with set screws; they can be set to any size, being simply bent like hoops but having their ends unconnected.

The foot pieces or shoes consist each of a sole piece D, of wood or other material with a plate of brass *g*, standing up around the heel, and plates *h, h*, standing up at the sides of the ball of the foot. The heel and side plates are intended to be suitably cushioned and the feet are intended to be confined in the shoe by straps; these are not shown as they may be applied in various ways and their use is supposed to be intelligible. Under each shoe there are two eyes *i, i*, to receive a spindle E; these eyes have shanks which fit in slots *p, p*, cut transversely in the under part of the sole piece, one across the heel and the other across the ball of the foot, and in each of these shanks there is a female screw to receive a male screw *j, j*, which has journals fitting in suitable bearings at the ends of the slots. These screws *j, j*, are prevented from moving endwise, and by turning them, a lateral motion is given to the eyes *i, i*.

The spindles E, E, are bent at their back parts in the form of a semicircle, and then turn off at a right angle in the same plane, the parts *k, k*, so turning off forming pivots fitting in holes in disks *l, l*, attached to the ends of spindles F, F, which fit in eyes *q, q*, attached outside the side pieces A, A. The spindles F, F, are parallel with the side pieces, and the pivots *k, k*, are at right angles to the said spindles.

The end of each pivot *k*, projects through the disk to the outside and carries a ratchet wheel *m*, which is firmly secured to it, and a spring click *n*, is hung on the disk which engages in the ratchet wheel. The teeth of the ratchet wheel are shown in the drawing to incline in such a way as to prevent the toe of the foot piece being depressed when the click is engaged but they may also be made to incline in the opposite direction to prevent the toe being elevated by changing the

side spindles with their foot pieces the right for the left and vice versa, turning the foot piece half around upon the spindle, and the pivots *k*, half around in the holes in the disks *l*.

The shoes may be moved longitudinally or turned upon the spindle *E*, and can be secured in any position by set screws *r*, passing through their eyes. The spindles *F*, *F*, can be moved longitudinally or turned in the eyes *q*, *q*, and secured in any position by set screws *s*.

The *modus operandi* is as follows: The first thing to be done is to secure the side pieces *A*, *A*, to the legs at a proper distance apart, placing cushions or pads around within the bands *C*, *C*, and also between the ankle bones and the side pieces. The next thing is to adjust the foot pieces or shoes to the deformed position of the feet. This is done by turning them on the spindles *E*, as shown in dotted lines in Fig. 3, moving them longitudinally on the said spindles, raising or lowering them bodily by sliding the spindles *F*, *F*, in the eyes *q*, *q*, throwing them inward or outward by turning the said spindles in the eyes, or elevating or depressing the toes by turning the pivots *k*, in the holes in the disks *l*. Any or all of these movements may be given as the nature of the case may require. There is also another movement which may be necessary, viz, the lateral movement of the foot pieces independent of the side pieces, which may be given to either the toes or heel of the foot or to the whole foot by the screws *j*, *j*. When the shoes are properly adjusted the parts are secured in place by the set screws *r*, and *s*, and by the click and ratchet *m*, *n*, and the feet are properly confined in the shoes. The cure is conducted with or without the aid of surgical operation according to the judgment of the operator, who will

move one foot at a time with the hand at certain intervals, as far as he considers proper toward the natural position, securing each at the point gained, by the set screws and ratchet, continuing to straighten them from time to time until each is entirely restored to its natural position. The apparatus will then require to be kept on for some time, and the patient should be allowed to bear his weight upon his feet in it, until the parts are fully restored and reconciled to their position, when it may be removed. Should the deformity only exist in one foot it will be necessary to confine both in the apparatus in order to secure a perfect restoration; though the straight one need not be confined so firmly or tightly as the deformed one.

The apparatus may be used for the restoration or adjustment of feet where the toes turn upward or outward, with as much advantage as for club feet.

In some cases it may be necessary to have a joint across the waist of the foot piece, which may be secured to keep the foot in different positions, this I do not consider to be in all cases necessary, and that is the reason I have not shown it.

Having thus fully described the nature, construction and operation of my invention I will proceed to state what I claim and desire to secure by Letters Patent.

I claim—

The side pieces *A*, *A*, to which are attached the adjustable foot pieces, connected and adjustable to each other in the manner substantially as described by the back piece *B*, plates *a*, *a*, and *c*, *c*, bolts *b*, *b*, and *d*, and slots *b'*, *b'*, and *d'*.

ZIMRI HUSSEY.

Witnesses:

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JONATHAN SUTTON.