

J. B. Brown,
Treating Deformed Feet.
N^o 1572. Patented Apr. 30, 1840.

Fig.1

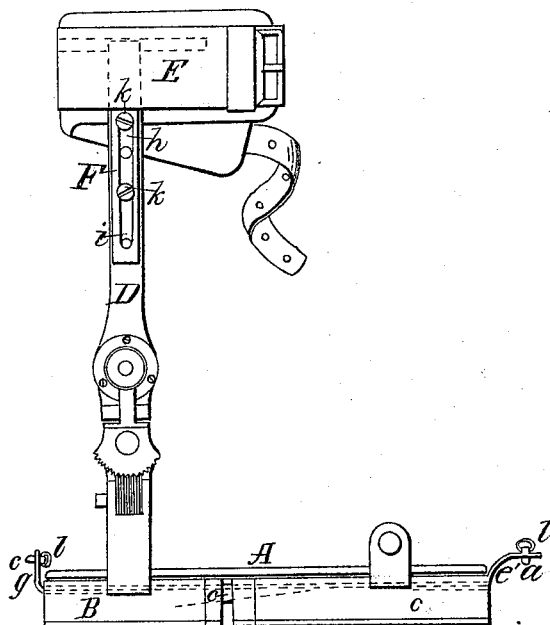


Fig.2

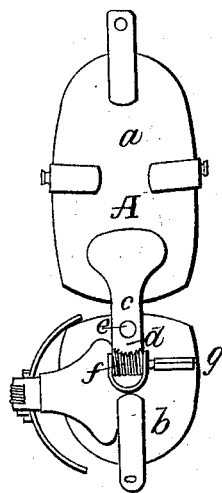
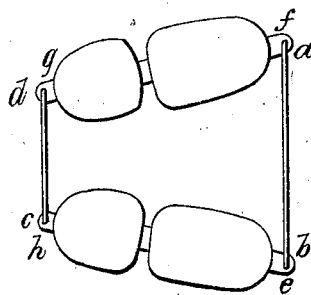


Fig. 3



UNITED STATES PATENT OFFICE.

JOHN B. BROWN, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR THE TREATMENT OF CLUB-FOOT.

Specification of Letters Patent No. 1,572, dated April 30, 1840.

To all whom it may concern:

Be it known that I, JOHN B. BROWN, of Boston, county of Suffolk, and State of Massachusetts, have invented new and useful Improvements in the Apparatus Generally Used by Surgeons in Orthopedic Operations on Club-Foot.

The said improvements, the principles thereof and modes in which I have contemplated the application of the same by which they may be distinguished from other inventions of a like nature, together with such parts or combinations I claim as my invention and consider original and new I have herein set forth and described, which description taken in connection with the accompanying drawings herein referred to forms my specification.

The deformity of "club foot" has been viewed with interest by surgeons, from the time of Hippocrates to the present day, but it has remained for this age to discover its true pathology and treatment. The dividing of tendons for correcting this physical imperfection has been occasionally practised for more than half a century; but without success until within a very few years. Even up to the present time no apparatus has been invented that was constructed in such a manner as to answer every indication in all the varieties of this unseemly deformity, to restore the foot to a natural shape after the division of the tendons.

Stromeyer of Hanover was the founder of the present mode of treating "club foot". He invented an ingenious apparatus for the purpose of restoring the foot after the operation of dividing the tendons had been performed, but it is believed that no apparatus has hitherto been invented or used in Germany, France or England, or in fact any part of Europe, that so perfectly answers every indication in all or any variety of "club foot," or which is so well calculated to correct the deformity, as the one now presented. It is an improvement on the apparatus used in Paris, which latter is very deficient in a suitably constructed foot-board or shoe, whichever it may be termed.

It is well known, to those who are familiar with the deformity of "club foot," that, in cases of "varus," both the anterior part of the foot and the heel are turned in, or make a reëntering angle with each other. The

foot-board or shoe which I have constructed is calculated to turn, both the anterior part of the foot and the heel, outward, or to swivel these parts on their common axis, an effect which is a *sine qua non*, in the treatment of club foot. In a great variety of cases and from repeated application, this improvement has been found to answer its intended purpose, to perfect satisfaction.

Figure 1 represents a side elevation of the apparatus as improved by me. Fig. 2, is view of the metallic top plate of the sole or foot-board, exhibiting more particularly or in detail my improvement thereon. Fig. 3, will be explained hereafter.

A, (Figs. 1 and 2) is the sole or foot-board, which, instead of being formed in one solid piece of wood or metal or a combination of each, in the usual manner, is constructed in two parts, on one of which the heel rests, while the other serves to support the front part of the foot. They are connected together by the metallic radial bar *c* which is firmly secured, to the underside of the metallic top plate *a* Fig. 2, by rivets or in any other proper manner. A toothed sector *d* is formed on the other end of the bar *c*, and between the former and the plate *a* the bar is attached to the plate *b*, by, and swivels or turns laterally on a screw or pin *e*. An endless screw *f* operated on by a suitable key applied on its head *g*, works in the teeth of the sector *d*, and whenever the key is turned by the hand, it moves the sector on the center *e*, thereby moving either to the right or left the front piece *C* of the foot-board *A*, and thus in case of "varus" where the front and heel of the foot form an angle with each other, the anterior part *C*, of the foot-board may be adjusted by means of the endless screw *f* and sector *d* to the proper angle to receive the foot, which is then to be firmly strapped down upon the foot-board in the usual manner. The same part of the apparatus is afterward to be employed to correct the above deformity, or in other words, to bring the anterior portion of the foot in a right line with the heel. This operation is effected by turning the endless screw a little from day to day and thus gradually applying a sufficient force to the front of the foot to twist it from its angular direction into a proper position with respect to the heel. In general, the remaining portion of the apparatus is similar to that heretofore used, with the exception of the top of the

upright standard D, Fig. 1, the difference of the same, being therein exhibited. The strap E which confines the apparatus to the leg, is attached to a movable piece of metal F, which has a slot *h i* formed therein, and is secured to the standard D by screws *h h*. By loosening the screws the piece of metal F, may be slid up or down upon the face of the standard D, and thus the length, as it were, of the standard, may be increased or diminished, at pleasure so as to adapt the apparatus to legs of different persons.

In all cases of "club foot" there is more or less twisting of the bones of the leg from the knee downward. The "fibula" is turned back upon the "tibia". To remedy this deformity I make use of a yoke at the toe and heel. Each of these yokes, consists of an iron or metallic rod or wire *ab*, and *cd* Fig. 3 of suitable size and length, the one at the toe being somewhat longer than that of the heel, as represented in the drawing. Metallic ears *e f*, *g*, *h*, Fig. 3 and *g' e'* Fig. 1, project from the toe and heel of the foot-board. The ends of the metallic rods *ab*, *cd* are bent at right angles and inserted in holes formed in these ears, as seen in Figs. 1, and 3. Circular rings or bent pieces of wire *l l*, are passed through holes drilled near the ends of the rods *ab*, *cd*, and these retain the extremities of the rods in the ears *e f*, *g h*. These rods connect together the heels and also the toes of both feet, in such manner as to enable the patient to walk, by taking short steps until the muscles become accustomed to their new action and the bones acquire their relative and normal position. When one foot only is deformed, a shoe is applied to the well foot, with ears at the toe and heel for the insertion of the

yokes. In this way the deformed leg is restored to its normal shape, and without this, the foot (although by other means perfect symmetry might be established in the same), would still turn inward from the obliquity of the bones of the leg.

Having thus described and set forth my improvements I shall claim in the same as follows.

1. I claim constructing the foot-board A, Fig. 1, of two parts B, and C and connecting the same by a radial bar *c* turning on a center pin *e* Figs. 1, and 2 so that by means of a toothed sector *d*, Figs. 1, and 2, on said radial bar *c* and an endless screw *f* working in the teeth of said sector, the anterior part C and heel D, on application of a turning key on the shank *g* of the endless screw *f*, may be set in angular position with each other, so as to adapt the same to the angle of deformity of the "clubfoot", and afterward used to correct the said deformity in manner as hereinbefore described.

2. I claim connecting the anterior parts and heels by the yokes *ab cd* attached to ears *e f g h* Fig. 3 and *e' g'* Fig. 1, projecting therefrom, the former of said yokes being somewhat longer than the latter, thereby turning the feet outward until the divided tendons are united, and the bones acquire their relative and normal position.

In testimony, that the above is a true description of my said invention and improvement I have hereto set my hand this eighteenth day of January in the year eighteen hundred and forty.

JOHN B. BROWN.

Witnesses:

R. H. EDDY,
EZRA LINCOLN, Jr.