Nov. 13, 1928. 1,691,235

O. L. FISCHER

BRACE FOR CLUB FEET

Filed June 1, 1927 2 Sheets-Sheet 1

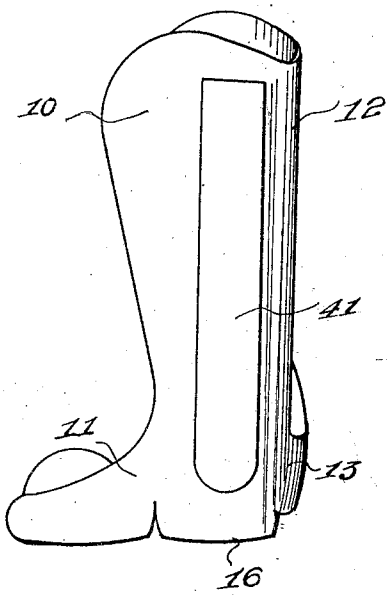


Fig. 1

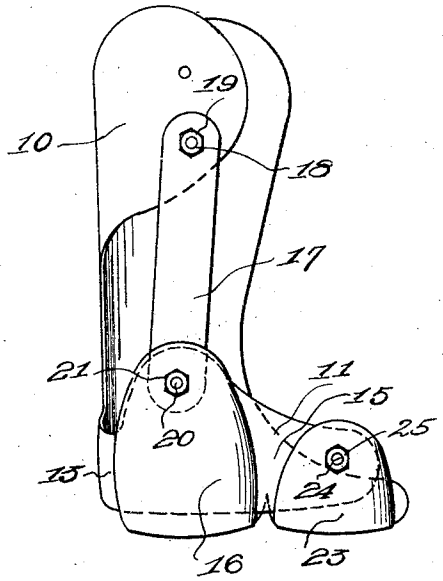


Fig. 2

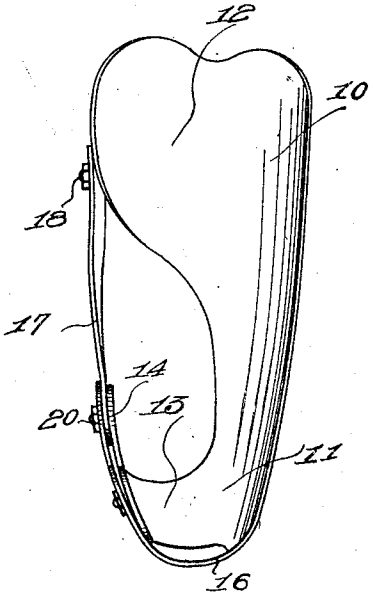


Fig. 3

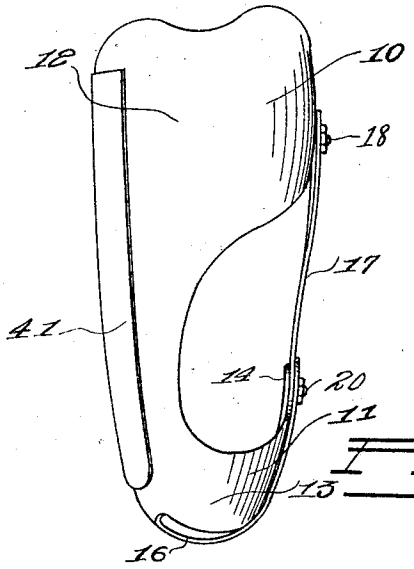


Fig. 4

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BRACE FOR CLUB FEET

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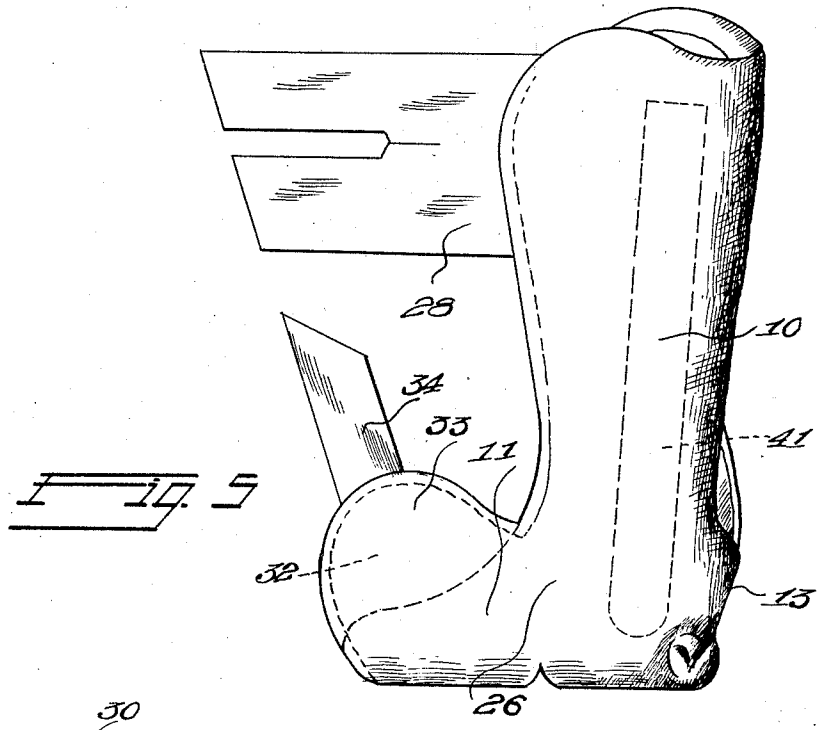


Fig. 5

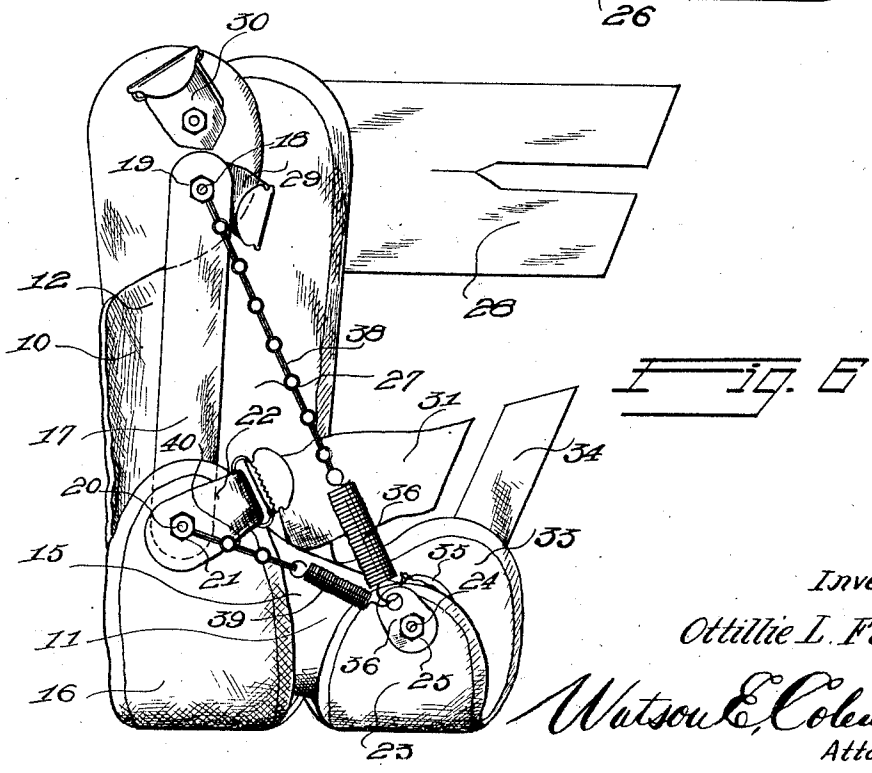


Fig. 6

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Patented Nov. 13, 1928. 1,691,235

UNITED STATES PATENT OFFICE.

OTTILLIE L. FISCHER, OF BANCROFT, NEBRASKA.

BRACE FOR CLUB FEET.

Application filed June 1, 1927. Serial No. 195,762.

This invention relates to braces for club feet and the general object of the invention is to provide a brace of a very simple construction for the treatment of club feet and which may be used for children, which will be very light, which is easily applied, and which will not be uncomfortable.

A further object is to provide a brace of this character which will act to pull the foot over and up by exerting a more or less constant tension upon the foot.

Another object is to provide springs for this purpose which may be adjusted as to length.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a brace constructed in accordance with my invention with the lining and covering removed to show the metallic body of the brace.

Figure 2 is a side elevation of the brace with the lining and covering removed.

Figure 3 is a front elevation of the brace as shown in Figures 1 and 2.

Figure 4 is a rear elevation thereof.

Figure 5 is a perspective view of the brace looking at the rear thereof and showing the lining and cover.

Figure 6 is a perspective view looking toward the side of the brace as in Figure 5.

The brace which is illustrated in the accompanying drawings is intended to be used for young children from six months old up and is designed to be used after the brace illustrated and described in my pending application for patent, Serial No. 195,761, filed on the first day of June, 1927, is discarded while the brace shown in my pending application is formed of two sections, one for the leg and one for the foot, the present brace has the leg section and the foot section all in one, although I do not wish to be limited thereto except as defined in the appended claims.

This brace consists of an integral leg and foot portion designated 10 and 11 and formed of sheet metal of any suitable character. The leg portion 10 at its upper end extends around laterally so as to embrace the leg as at 12 and at its lower end is extended at 13 in a curve to embrace the heel, this portion 13 extending upward against the side of the foot at 14 and forward against the outside of the foot as at 15. The leg portion 10 at its lower end has an extension 16 which extends beneath the heel and then upward overlapping the part 14. Attached to the upper end of the leg portion 12 and at its lower end overlapping the part 14 and the extension 16 is a brace 17 held to the part 12 by a bolt 18 and nut 19 and to the part 14 and 16 by a bolt 20 and nut 21. To the bolt 20 is attached a short strap 22 having a buckle. The forward portion of the foot part 11 is also transversely extended beneath the toes or ball of the foot at 23 to form a sole, and then is extended upward against the portion 15 and held thereto by a bolt 24 and nut 25. These parts as described are entirely covered with soft leather or other fabric and soft leather or fabric may be used as a lining for the interior of the brace, preferably, however, soft leather is used. The outer covering is designated 26 and the inner lining 27. The outer covering at the upper end of the leg portion 10 is formed to provide a bifurcated strap 28. Held to the upper end of the leg portion 12 is a strap 30 also having a buckle. The bifurcated strap 28 has its forked portions adapted to engage these buckles. It will be noted that the straps 29 and 30 are more or less freely movable upon the bolts or members which attach these straps to the leg portion. Attached to the lower end of the leg portion 10 is a relatively wide strap 31 adapted to engage with the buckle on the strap 22 and pass over the instep. The outer covering 26 and the inner lining 27 are extended above the foot portion 11 to form a pocket within which is disposed a somewhat hollowed metal plate 32, the portion 33 thus formed, being adapted to fold or flex over the toes and being provided with a strap 34 adapted to engage with a buckle 35 mounted upon the covering for the portion 23. When this strap is tightened, it tends to contract the forward portions of the brace against the side of the foot and to draw the part 33 over the toes.

Attached to the bolt 24 is a small plate or clip 36 and engaged with this plate is a coiled contractile spring 36 attached to one end of a chain or other flexible element 38. This extends upward and rearward and is engaged with the bolt 18. Also attached to this clip or plate 36 is a spring 39 engaged with one end of a chain or other flexible element 40 which extends upward and rearward to the bolt 20. These flexible ele-

ments 38 and 40 and their springs 37 and 39 tend to draw the forward portion of the foot upward and tend to pull the outside of the foot upward and over. The springs can be adjusted by making the chains 38 and 40 shorter or longer, that is, by hooking the chain to the bolts 18 and 20 nearer to or further from the springs 37 and 39, thus increasing or decreasing the tension on the springs.

The brace is intended to be worn with a shoe and is to be worn after the foot is big enough for a size 0—1 shoe. The shoe can be even bigger and the brace will still fit as the larger shoe can stick out in front without impeding the action of the brace. Preferably the leg portion is braced by a supplemental brace 41 riveted or otherwise attached at its upper ends to the leg portion 10 and the heel of the foot portion 11. The foot brace is formed with a hollow to receive or accommodate the ankle bone and is padded on the inside so as not to injure the bone or press it too much. The advantage of this brace is that there is a constant tendency to draw the outer side margin of the foot upward, while at the same time, the foot may be gradually straightened by tightening up upon the straps holding the foot in place within the brace. Preferably I use elastic webbing as straps, but I do not wish to be limited to this nor to the particluar form of buckles nor details of construction, as these may be modified without departing from the spirit of the invention.

The brace will be applied to the foot during the day and taken off at night so as to give the foot a chance to rest. This brace must be worn while the child is walking or crawling about and will not materially interfere with his movement nor be painful or uncomfortable. The braces which are illustrated and described in my pending application above referred to are to be used from the birth of the baby until it is around 8 months old and then the braces which I have illustrated and described are to be used. The first named brace gradually acts to straighten the foot and the second brace holds the foot into position after it has been straightened. Actual practice has shown that club feet can be successfully straightened without interfering with the growth of the child in any way and without being particularly uncomfortable. The braces are light in weight so that the baby or small child can use his feet or legs easily.

The portion 10 of this brace is designed not to be so narrow as to cut the leg along the sides of the leg, but in order to lighten this brace the leg piece is cut away on one side. This not only lightens it but permits the person adjusting the brace to see the back of the shoe and whether the shoe is in straight in the brace and down far enough within the brace.

I claim:—

1. A brace for treating club feet formed of sheet metal shaped to provide a leg embracing portion and a foot embracing portion including a sole, the sole being formed by two separate parts connected to one side of the foot embracing portion and extending upward against the other side of the foot embracing portion and connected thereto, and a resilient flexible element connected to the last named part and extending upward and rearward and connected at its upper end to the leg embracing portion and adjustable to increase or decrease the tension.

2. A brace for club feet formed of sheet metal, said brace being formed to embrace the leg and partially embrace the ankle and extend around the heel and along both sides of the foot, one of the extensions along the foot having two laterally extending partially separated portions adapted to be disposed beneath the heel and toes respectively and then extending upward against the outside face of the opposite foot portion, and being attached thereto, the opposite foot portion having a part flexibly connected thereto to extend over the toes, flexible resiliently contractable members connecting the upper end of the portion extending beneath the toes to the leg portions and exerting constant strain thereon, a buckle and strap for holding the flexibly connected parts over the toes, and buckles and straps for holding the brace on the leg and ankle.

3. A brace for club feet formed of sheet metal comprising a leg portion and a foot portion, the leg portion being formed at its upper end to embrace the leg and below its upper end to partially embrace the ankle and at its lower end to extend around the heel and along both sides of the foot, one of the extensions along the foot having two laterally extending partially separated portions adapted to extend beneath the heel and toes of the opposite foot portion and being attached thereto, the first named foot portion having a part flexibly connected thereto to extend over the toes, a bracing strip connected to the upper end of the leg portion and at its lower end to the rear-most one of the lateral extensions, flexible resiliently contractable members connecting the upper end of the portion extending beneath the toes to the leg portion and exerting constant strain thereon, a buckle and strap for holding the flexibly connected part over the toes, and buckles and straps for holding the brace on the leg and ankle.

In testimony whereof I hereunto affix my signature.

OTTILLIE L. FISCHER.