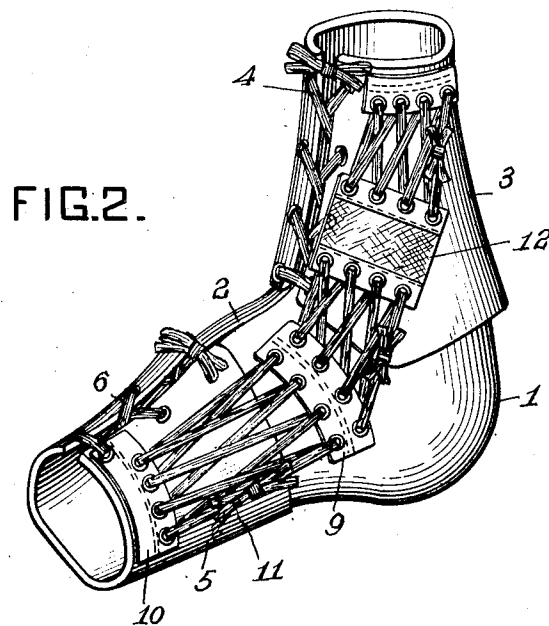
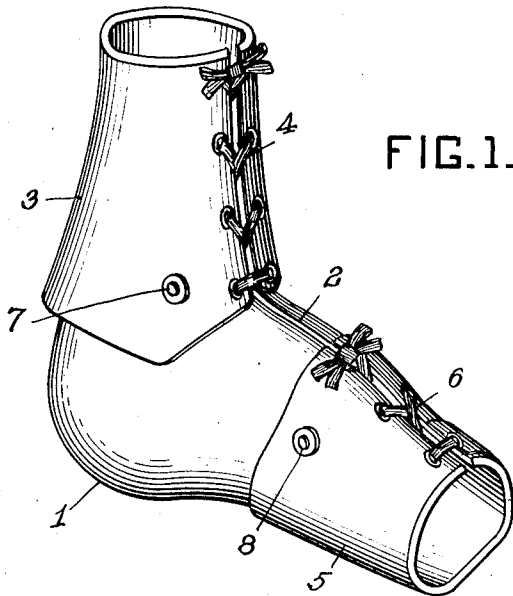


E. MUELLER.
ORTHOPEDIC BRACE.
APPLICATION FILED JUNE 7, 1912.

1,058,322.

Patented Apr. 8, 1913.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ENGELBERT MUELLER, OF RESERVE TOWNSHIP, ALLEGHENY COUNTY,
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ORTHOPEDIC BRACE.

1,058,322.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, ENGELBERT MUELLER, residing at Reserve township, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Orthopedic Braces, of which improvement the following is a specification.

The invention described herein has to do with orthopedic braces, and the object of the invention is to provide a brace which may be applied to a deformed limb joint in such a manner as to effect a gradual straightening of the joint and at the same time allow the joint to move in its natural manner.

In the accompanying drawing, which forms part of the specification, one embodiment of the invention is shown in the form of a brace for straightening a deformed foot and ankle joint.

Figure 1 of the drawing is a perspective view of one side of the brace, and Fig. 2 is a similar view of the opposite side.

Like numerals are used to designate like parts in each figure.

In the practice of the invention two or more sleeves or limb-engaging members are formed from stiff leather, or like materials, in such a way that each member may be applied to and tightened upon a limb member. The said members are connected to each other by a rigid connection on the side of the joint toward which the deformity tends and by a yielding connection on the other side of the joint. Also the rigid connection is preferably of such a character as to be rigid in but one direction, such as a pivot connection.

The brace illustrated herein is particularly arranged to straighten a left foot which turns downwardly and inwardly, and to such an end three sleeves are shown. A sleeve 1 is formed to extend beneath the heel and above the instep where it is divided longitudinally, as indicated by the line 2. Above, or at the upper end of sleeve 1, there is a second sleeve 3, properly shaped to engage the leg just above the ankle joint; and, in order to tighten such sleeve in its position upon the leg, suitable lacing 4 is provided. At the lower end of the sleeve 1 there is a third sleeve 5, shaped to engage the foot, and provided also with lacing 6. The sleeves 3 and 5 overlap or telescope with the sleeve 1 so that by

tightening the lacing in each of the said sleeves 3 and 5 in order to secure them in position, the sleeve 1 will also be held tightly in its position about the heel and instep portion of the foot.

The sleeves are united on one side of the joint by pivots 7 and 8, which form an unyielding connection on the inside of the foot, that is, on the side of the foot toward which the deformity tends. It will be seen however that this connection does not prevent the joint from moving in its normal direction. On the opposite side of the brace the sleeves are connected together by a yielding connection, which may be adjusted from time to time so that the desired force tending to straighten the joint may be constantly maintained as the deformity becomes rectified. To such an end the connections of the sleeves on the side opposite to the pivot connections are preferably strips of buckskin. An inlet strip 9 is sewed to the sleeve 1 in the position shown, and a similar strip 10 is sewed to the sleeve 5. It will be seen that by tightening the yielding strip or cord 11 in this particular connection, the foot will be gradually turned outwardly and upwardly. The yielding connection between the sleeves 1 and 3 includes an elastic strip 12, such strip being used when desired to give an increased yielding effect to the connection.

It will be observed of the invention that a substantially constant force may be exerted upon a deformed joint to straighten it; and that while such force is being applied the joint is practically free to move in its proper natural manner. It will also be observed of the particular brace shown herein that while it is effective for its intended purpose, it may be worn within a shoe.

I claim as my invention:

1. An orthopedic brace consisting of sleeve members each surrounding and firmly engaging a limb on opposite sides of a joint whose deformity is to be corrected, the said sleeve members being united on one side of the said brace by an unyielding connection, and united on the opposite side of the brace by a yielding connection.

2. An orthopedic brace consisting of sleeve members formed of substantially rigid material, each of said members surrounding and firmly engaging a limb on opposite sides of a joint whose deformity is to be

corrected, the said sleeve members being pivoted to each other on one side of the brace and being united on the opposite side of the brace by a yielding connection.

5 3. An orthopedic brace consisting of telescoping sleeve members formed of substantially rigid material and provided with means for securing each member to one side of a joint, the said sleeve members being
10 pivoted together on one side and in the direction of the action of the joint to be straightened, and being united by a yielding connection on the opposite side of the joint.

15 4. An orthopedic brace for an ankle-joint consisting of a sleeve member formed

to incase the heel and instep, a sleeve at each end of the said first named sleeve and provided with means for tightening in their positions on the leg and foot members, the said sleeves telescoping with each other and pivoted together on one side of the brace, and adjustable yielding connections between the said sleeves on the opposite side to the pivoted connections.

In testimony whereof I have hereunto set 25 my hand.

ENGELBERT MUELLER.

Witnesses:

PAUL N. CRITCHLOW,
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